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AND

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THE BRITISH ASSOCIATION.

SEVENTH MEETING: LIVERPOOL.

[Second notice.]

WRITING at the close of the meeting (though still within its vortex), we are better enabled to look at its general features and effects; to consider the circumstances of the anniversary altogether, and to glance towards the future, with the expectations that may be formed of the progress of this rapidly increasing, and now nationally important institution.

The number of members enrolled at Liverpool has been 1840; the sum of money contributed to the funds (with some deduction for expenses at this meeting), 2633*l.* Thus, there are large elements in the lower or financial strata for producing results of great value to science; and when we see these elements directed by such men as are at the head of the Association, in each of its Sections, it is impossible not to anticipate growing powers, and yet more beneficial consequences. Superior organisation, the fruits of experience, must contribute to the *desiderata* hereafter to be hoped for; and improvements in those respects where there have been defects,— defects and imperfections inseparable from the earlier periods of any great design.

With regard to the reception given to the meeting at Liverpool, we may repeat, that to the very close, it augmented in sumptuous hospitality and friendly kindness. Every one seemed to vie with his neighbour in paying to visitors all the courteous attentions for which the occasion afforded an opportunity: private accommodations and entertainments abounded, and the public assemblages were provided with a superfluity of luxuries, lavished with an unsparing hand. At the last ordinary on Saturday, we hear the dinner went off with an *éclat* beyond even the appointed "field-days" of Monday and Wednesday.

The proceedings of the Sections have also been, on the whole, satisfactory. We trust there is no one who entertains so mistaken a notion of these anniversaries, as to suppose that any wonderful discoveries in science will or can be promulgated at them. Their advantages are of a different, but, perhaps, not less important character. They are calculated to diffuse a more universal love for scientific pursuits, to soften asperities, and cultivate good feelings, and to stimulate new minds to enter into the arduous, and, if successful, honour-crowned race. They pretty accurately mark the advance of science up to their own date; and if they do not *add* much to the building, they must unquestionably *suggest* additions, and (what is in our opinion equally useful), they knock down past blunders in the superstructure, and clear away a vast quantity of the fanciful projects and rubbish which encumber and prevent improvement. Knowledge is as much promoted by the dissipation of Error as by the establishment of Truth.

We proceed, in continuation of our last *Gazette*, to some of the details. In SECTION A, the papers appointed for TUESDAY were,—

1. Dr. Robertson — Report on Nutations.
2. Mr. Russell — Report on Waves.
3. Mr. Blackburne — On Geometrical Theorems.
4. Professor Powell — On Absorption of Light.
5. Sir W. R. Hamilton — On Abel's Theorem.
6. Mr. Henwood — On Temperatures of Slate and Granite.

Of many of the proceedings of this Section, it is (as we have already stated) impossible to give any report that would be generally intelligible. Accurate diagrams, and figures to a great extent (not ridiculous and partial pretences), are requisite to illustrate the demonstrations; and, after all, perhaps, in some instances,

> "Where ignorance is bliss,
> 'Tis folly to be wise."

Dr. Robertson's 'Report on Nutation' complimented Bradley on the astronomical calculations he had established a hundred years ago, and explained the subsequent improvements to the present time. Elaborate calculations on the aberrations in the relative motions of stars, and a statement of the accuracy of the observations on sidereal disturbances, with comparisons founded upon them, were the principal points in this paper. Mr. Baily noticed how closely Dr. Robertson's views were confirmed by the previous labours of Bradley, with which they so entirely agreed.

Mr. Russell read his 'Report on the Waves'— a continuation of the subject and experiments mentioned in our last, which we reserve for a future Number.

Mr. Blackburne's paper 'On Geometrical Theorems' was the next communication; and Professor Powell proceeded to the consideration of the Absorption of Light, and particularly the capricious phenomena exhibited in the absorption of the rays. Various theories had been advanced to account for these phenomena. Amongst others, that of Von Redi, which supposed that different rays might be retarded in their passage through certain media, and come out superposited upon other rays, and thus form complex rays. This theory appeared to Professor Powell highly satisfactory: the only defect to be supplied in it was some numerical law for the facts. The chairman, however, held the theory of Von Redi to be quite untenable; and Professor Lloyd agreed in this opinion.

Sir W. R. Hamilton read a paper 'On the Possibility of resolving Equations of the Fifth Degree.' He took the theory of Abel as a text in discussing the subject; which, though not altogether satisfactory, had not been proved to be an impossible mode of solution.

Mr. Henwood presented to the Section the results of a long-continued and extensive series of observations, 'On the Lower Temperature which prevails in the Granite than in the Slate of Cornwall.' The experiments were made in running streams of water immediately on their issuing from the unbroken rock; a mode which he considers less liable to objection than when made on the air, standing pools of water, or in the rock: the former being affected by the presence of workmen and their lights; the second and last by the temperature of the air and by evaporation from their surfaces. The difference at all depths he finds to be about 3° 9′. It also appears that the elevation of temperature taking place in descending is one degree for every 6·5 fathoms in slate, and for every 6·9 fathoms in granite. The experiments from which these deductions are drawn were about 150 in number.

SECTION B.

Mr. J. J. Griffin opened the business by exhibiting and explaining many Specimens of Chemical Apparatus which he had constructed. The models seemed to be held up as if for sale, and we thought the time spent in describing them much thrown away, though Mr. Faraday kindly complimented Mr. Griffin on their cheapness, ingenuity, and utility.

A discussion ensued upon Mr. Golding Bird's paper 'On the Crystallisation of Metals, by Voltaic Action,' hurriedly read yesterday, which incidentally brought up the subject of Mr. Crosse's experiments. The chairman, Dr. Faraday, observed that it was one of intense interest, as they all must remember the excitement which prevailed at the last meeting of the Association, on discovering that artificial crystals could be produced by means which were previously supposed only to be active agents in the mechanism of the earth. The experiments of M. Becquerel, Mr. Crosse, and Mr. Fox, were of the greatest importance to science; but all that they had been able to state of the mineral veins which were found in the earth was, that they were, in all probability, formed by chemical or electrical currents. The difficulty had been to understand how a current running round the earth should cause the crystals to be deposited in particular and very limited places, the currents themselves being general. It came to this,—that supposing they sent a current round in a certain direction, and brought it to a given situation in the earth, they should find crystals where the current made the juncture. This was as far as the experiments of the above-named gentleman went. Mr. Bird said that he obtained crystals not only at the extremities of the current, but in the interval between; and it was of the utmost consequence to ascertain whether such were really the case.

Mr. Golding Bird said it had been long considered, and the experiments of Mr. Fox had proved it, that electric currents fermented the earth in a variety of veins; but it was difficult to understand how metals had been deposited in veins where none had previously existed. It was supposed that metals were formed at the termination of veins already in existence, but they had to look to the first formation of those veins. He was not presumptuous enough to suppose that his experiments were conclusive on that point, but they would perhaps throw some light upon it, and add another fact to the experiments published by Dr. Faraday in the "Philosophical Transactions." The experiments were simple, and succeeded so uniformly, that any gentleman might try them with a certainty of success. Mr. Bird then exhibited specimens of the copper he had produced by means of voltaic agency, and proceeded to detail other experiments which he had made in connexion with the formation and crystallisation of the protoxide and carbonate of copper. The oxide had been previously obtained by M. Becquerel, by means of a tedious process, but Mr. Bird obtained it in a very perfect crystal by the following arrangement:—A piece of glass tube, four inches in length, was closed at one end,

by means of a plug of plaster of Paris, and immersed in a glass cylinder, filled with a solution of copper, the tube being filled with a solution of potash: on immersing an arc formed of zinc and copper into the fluids in such a manner that the zinc leg of the arc may dip into the alkaline solution, whilst the copper may dip into the solution of that metal contained in the exterior cylinder. Under these circumstances an exceedingly weak electric current is developed, not, however, sufficiently energetic to reduce all the copper present in solution to the metallic state, but of sufficient intensity to cause the decomposition of the peri-salt of copper, and its reduction to the state of protoxide crystals, which, after a few days, became deposited on the plate of copper which served for the negative electrode. These crystals resembled so closely the native forms of oxide of copper, the ruby copper of miners, that they could scarcely be distinguished from them by the most experienced eye. Some specimens of the kind exhibited by Mr. Bird, vied in transparency with the native ruby.

Dr. Faraday stated, in addition to Mr. Bird's explanation, that the great point which he insisted upon was, the importance of getting a first action out of contact with the electrode. When a portion of copper was first deposited, the action would go on increasing. It was not the growth of the crystal when once formed, but the striking circumstance of the origination of the atom out of contact with the extremities of the electrodes. At the same time chemists were very cautious men. He had no doubt that Mr. Bird would try to find out whether copper, in some shape, might not have been accidentally mingled with the plaster of Paris, and so began the operation.

Mr. Bird replied that he had made experiments at least fifty times, in a variety of methods; he had used surgeon's lint over bladder, as well as common pipeclay, with the same results.

Dr. Faraday was jealous, for the honour of his section, that there should be no mistake; heat might decompose copper. If the crystals formed otherwise than by the current, there was an end of the discovery—otherwise it was very great.

Some farther conversation ensued, which the chairman concluded by observing, that if it were possible to demonstrate the fact by any tangible experiment, that crystals can originate independent of the extremities of the current, there being no nucleus formed, such proof would be opening the door to a very large addition to chemical science.*

Dr. Faraday then called upon Mr. John B. Hartley to read his paper 'On Preventing the Corrosion of Cast and Wrought-Iron in Salt Water.' When they considered the manner in which cast and wrought-iron was introduced into the construction of vessels, as was the case at this port to a great extent, it would be highly important to hear any means by which it could be rendered capable of resisting the corrosive action which it sustained from salt water.

Mr. Hartley stated, that upon clearing away the soil from Jackson's Dam, in the port of Liverpool, an iron sluice was discovered, which had been immersed in salt water for the space of twenty-five years. Upon taking it up it was found incrusted with barnacles, shells, and sea-weed. Some of the iron was in an excellent state of preservation, whilst the rest of it was entirely decomposed. The lid of the sluice was fastened by means of a brass bolt, two and a-half inches in diameter. In connexion with this pin it was that the iron was in a preserved state. By some inadvertence all the iron-work was broken up and taken to the foundry. In 1825, another valve was taken up, which had been in the water the same time. The top joint of the valve was similar to the one previously found, having an iron pin working in a brass socket, which was again enclosed in an iron case. All the iron in connexion with the brass was in excellent preservation, whilst that removed from it was corroded. Mr. Hartley exhibited part of an iron chain, which had been so corroded in eighteen months as to be quite useless, as well as a piece of iron from the keel of the John Bull, which had been in the water nearly twenty years: it was as light as a piece of fir, and could be cut with a knife like plumbago. In consequence of this discovery, all the iron-work employed beneath the level of the tide at dock-gates, &c. had been placed in connexion with brass, either by having brass plugs fastened into it, or by being someway worked up with it, and the result had been the preservation of the iron. A long discussion took place upon this subject, which concluded in the acknowledgment that the iron, where conjoined with copper, was preserved from corrosion by that juxtaposition of the metals.

Dr. Andrews then read his paper 'On some singular Modification of the ordinary Action of Nitric Acid on certain metals;' shewing that, by introducing a piece of platina wire in connexion with the metal whilst it was violently acted upon by nitric acid, the action of this acid almost entirely ceased, but that the metal, in most instances, changed colour. This he accounted for by supposing that the platina caused a current of nitrous acid gas to play round the metal, and by this means preserved it from the action of the acid.

Dr. Faraday said, it was most useful to science to shew how metals could be saved from oxidation. It might have been the same influence which had been incidental in protecting the cast-iron from the action of the sea-water. It was a great thing to see a substance like iron, which Englishmen might be said to live upon, liable as it was to the corrosive action of sea-water, or nitric acid, protected from their influence by being brought into contact with other substances. They were much obliged to Dr. Andrews for drawing their attention to the subject. It was in this way, by observing causes, that they were enabled to get at laws.

SECTION C.—*Papers on the List.*

1. Mr. H. E. Strickland—On the Formations of Gravel.
2. Mr. R. Mallet—On the Mechanism of the Motion of Glaciers.
3. Marquis Spinetto—Stratification of Deserts between Suez and Algiers.
4. Mr. Horner—A notice from Mr. Lyall respecting Christiana.
5. Dr. Traill—On the Geology of Spain.

Professor Sedgwick, in the chair, before proceeding with the business of the day, read two invitations, one from Lord F. Egerton, in the Bridgewater Office at Manchester, inviting the Association to visit the tunnels of the collieries near Worsley; and the other from Mr. Frith, inviting a party, of not more than thirty, to visit the salt mines at Northwich.

A considerable party of members went to the salt mines, and were, both scientifically and gastronomically, splendidly entertained.* Many hundred lights illuminated these vast works, and a sumptuous collation was spread for their refreshment. The day was, however, exceedingly unfavourable.

We are not aware whether an excursion was made to the collieries; but on other days parties were highly gratified by visits to Lord Derby's extensive zoological collections; as were others by the inspection of Mr. Laird's iron vessel, now building, the Zoological Gardens of Liverpool, and other places of interest in the town and neighbourhood.

Mr. Strickland's paper 'On the Formation of Gravel' was not only in itself important to geologists, but, in the discussion which followed, it raised the whole question of the silurian system, and the greywacke formations in Wales and North Devon. He considered that the various kinds of gravel ought to be divided into classes. Some were stratified, as if by the action of waves; others, thrown together or deposited in heterogeneous masses, as if borne down by rivers. Some contained mammalia, and other organic and marine remains, of which others were destitute. He also endeavoured to distinguish beds which were mixed with flints, from beds in which no flints occurred. On these grounds, he contended that two periods must be assigned to these formations, viz. that of marine drift, and that of fluviatile deposits. The district between the Mersey and Avon, bordered on the one side by the rocks of Hereford and the mountains of Wales, and on the other by the oolite formation of the midland counties, formed the most important part of this formation in England. It appeared probable that there might have been a current running north and south between those rivers, either like the Pentland Firth of Scotland, or, perhaps, of a more violent description. There existed no data to determine the regular age of the gravel, but the deposition of the marine had evidently taken place when England was below the level of the sea, and the fluviatile was caused by the action of rivers and lakes now no longer existing. He believed that Cheshire, Staffordshire, and Worcestershire, being very low, had, at some period, admitted the sea into the interior; and that those parts of England had been submerged, marine shells being common in the gravel. His general conclusions were, first, that great beds of erratic gravel, found in various parts, were produced by a northerly current passing over many counties, which lay under the sea, and in which no terrestrial fossils or remains are found; and that the bones of mammalia, &c. found in deposits of rivers and lakes, when England became dry land, formed the second. After enumerating several specialities, Mr. Strickland concluded by recommending the subject as one worthy of further investigation, being attended with the highest interest to geologists.

Sir Philip Egerton remarked, that the remains of mammalia had been found on the plain of Cheshire. In the progress of cutting for the Grand Junction Railway, two grinders of the elephant had been discovered in a bed of gravel replete with marine shells.

Professor Phillips acknowledged the highly interesting nature of the subject, and remarked that it would be a desirable object if the gravel could be traced to its origin. The distinction

* Bearing on this interesting question, Dr. Faraday was not, perhaps, aware of Mr. Fox's remarkable experiment, stated in the Cornwall Polytechnic Report, which seems strongly to corroborate Mr. Bird's opinions. Mr. Fox tells us, that on immersing a bladder containing acidulated water and zinc in a solution of sulphate of copper, the copper was deposited in a pure state on the surface of the bladder. Hence it appears that the sulphate of copper must have acted as an electric pole, and been electro-negative with respect to the zinc from which it was separated by the bladder. We have heard also, that Mr. Crosse has subsequently observed silver deposited on the outside of an unglazed vessel, the zinc being in the inside, and the other metallic pole on the outside, which would confirm the dislocation of the poles.

* Another party is engaged for Tuesday the 19th.

pointed out by Mr. Strickland with regard to the nature of the deposits (fresh or salt water) was highly important. It was probable that in former times the district between the Mersey and Bristol Channel was covered by the ocean.

After some observations made by Captain Denham, Mr. Smith, of Jordanhall, Mr. de la Beche, and other members,—

Professor Sedgwick bore testimony to the highly important nature of the subject to geologists. Innumerable facts must be collected before a probable theory could be advanced, but the observations which had been made tended greatly to confirm the doctrine of elevation. He believed Wales was of very recent formation, perhaps of only a few thousand years; the configuration of its mountains evidently shewing that the fissures and openings were not caused by the ordinary action of running water, or of any operation now going on, but must have been produced by an upheaving process at a late geological era. The filling up of the lakes, the alteration of the form of the mountains and valleys, by the degrading process now in action, could not have been of long continuance; and he was quite convinced, from personal observation, that the surface could not have been long subject to the present external influences: on the contrary, the phenomena of the boulder stones, traced in every radiation southward from Cumberland, proved that part of the island to have been the older land.

At the close of a discussion of two hours, and of extreme interest, we do not know whether the decision was that Wales, or the North of England, emerged first from the bottom of the ocean; or whether certain deposits were made when the Atlantic was a vast continent, and Britain, perhaps, one sea. The meeting seemed to be carried by the eloquently expressed opinions of the learned professor.

The next paper read was by Mr. Mallet, 'On the Motion of the Glaciers,' attributed to the mechanical pressure of the atmosphere, in which we discovered little or nothing of novelty.

The Marquis Spinetto also read a paper 'On the Sinking of some Wells between Suez and Cairo,' which requires no detailed notice.

Professor Sedgwick, whilst the following paper was getting ready, begged to call the attention of the gentlemen present to some beautiful specimens of Limestone Formation, belonging to Mr. Gilbertson.

Mr. Horner next read a notice from Mr. Lyell, on the fact of a bed of true granite in Norway, lying on a strata of limestone containing organic remains. Professor Sedgwick remarked, that twenty years ago they might have been surprised at the present circumstance, but as it was well known that granite was of igneous formation, he firmly believed the thing was possible, but that the granite must have been driven into its present state when in a state of fluidity intensely heated.

Dr. Traill next treated on the geology of Spain. Mentioning Montserrat, he said that it was not an isolated mountain, as generally supposed, but the last of a mountain chain extending to the Pyrenees;—that the upper part of the mountain was composed of conglomerate, and this rested on clay slate. He likewise noticed, that in those parts of Spain wherever water was plentiful, there the peasants were most industrious. Speaking of the salt mines at Cordova, he said that the salt was so pure, that it had only to be ground in mills similar to our corn-mills before it was fit for use; that the salt, as was generally supposed, was not formed into a rock, but lay in a valley, which extended three leagues in circumference; that the vast precipice of salt was 400 feet in height, standing on a floor of salt. It was a royal monopoly, guarded by the military; that once, from his ignorance of the Catalonian language, a sentry had levelled his piece at his breast, and was on the point of taking his life, no one being permitted to approach the place unless under the guidance of a miner. He supposed that the quantity of salt was so great as to furnish Spain for several ages. In several places the salt is channelled by water; the edges of these channels are extremely sharp, which proves the extreme dryness of the climate, no moisture being found in the salt.

SECTION D.—*List of Subjects.*

1. Mr. Macleay—A letter from Captain Ducane On the subject of the Metamorphoses of Species of Crustacea allied to *Palæmon*.
2. Mr. Babington—Notice and Results of a Botanical Excursion to Guernsey and Jersey.
3. Dr. Allis — On the Sclerotic Bones of Birds and Reptiles.
4. Rev. J. Reade — On the Chemical Composition of Vegetable Membrane and Fibre.
5. Rev. F. W. Hope—Remarks on the genus *Filaria*.
6. Mr. Bowman—On the Internal Anatomy of the Palm Tribe.
7. Mr. Niven—On Vegetable Physiology.

Mr. Macleay read a very curious letter from Captain Ducane, 'On the Metamorphoses of certain Species of Crustaceous Animals allied to the *Palæmons*, or Prawns and Shrimps.' According to these, the ova of prawns produced minute diaphanous creatures, quite different from the parent prawn. They lived only two or three days. Mr. Macleay thought these phenomena might be referred to different stages of developement; Dr. Richardson supposed it possible that some parisitic animal might have intruded itself, and been mistaken for the offspring of the prawn; and Mr. Hope thought the animal (found as it was in brackish ditch-water) belonged to the shrimp, and not to the prawn family, as was the case in similar localities in Norfolk and Suffolk. A grant, it will be seen, has since been made to pursue these curious inquiries; and, perhaps, it may turn out after all, that

Fleas *are* lobsters! d——n their souls!

Mr. Haliday exhibited a figure of the *Argas Persicus*, the poisonous insect which excited some discussion at the meeting yesterday. It appeared that these were of two different species, the *exodes* and *argos*, each of which have a serrated proboscis, the teeth being turned outside. The *exodes* are very common in the West Indies, and in Mexico they are considered quite a pest, as they no sooner make their appearance than the clothes of every individual are covered with them. The President also stated, that in Cuba he had seen the hides of oxen so closely covered with them, that no part of the hide was to be seen. The insect often falls to the ground by the rostrum breaking off from the mouth, when a remarkable phenomenon is exhibited. They eject from the mouth in this condition some thousands of eggs, until the skin is empty, and all the inside appears to have been voided.

Mr. Bowman read some remarks from Mr. Gardner, on Vegetable Physiology, illustrative of an extensive series of experiments on the Wood of Palms.

Mr. Gray described several rare and interesting mammalia, which were the property of the Royal Institution of Liverpool. The first he noticed was a Sea-Otter from the Brazils, and also inhabiting several parts of the Pacific Ocean, which differed much from the ordinary otter of our rivers, in the much more largely developed feet. No specimen of the kind was contained in the museums of London, Paris, Berlin, or, indeed, any part of the continent. There was, also, a curious animal from New South Wales, extremely rare in the collections of this country, and of the genus *Phylosaures*, having teeth like seals. There were, also, although not new to science, two antelopes from the western coast of Africa, which were little known in this country. He likewise described the *Lelis gracilis* from India, which was first delineated by Dr. Horsfield, from the collection made by General Hardwicke; as, also, a gigantic seal, which had only been known before by description. These were circumstances which must necessarily lead to the appreciation of such local exhibitions, containing, as they did very frequently, such objects of rare and novel interest. He was happy to observe, that the increased facilities afforded to the public for viewing this, as well as other public exhibitions, was not productive of the slightest injury to the specimens.

In a conversation which ensued, high compliments were paid to the Museum of the Institution; and it was noticed to be well worthy of being better known than it seemed yet to be to the inhabitants of Liverpool. Mr. Allis's paper, 'On the Sclerotic Bones of various Birds and Reptiles,' was one of much value to comparative anatomy. He referred to the works of many of the most celebrated naturalists on the subject, and, exhibiting the bones of eagles, vultures, owls, hens, pigeons, &c. &c., as well as of many reptiles, pointed out their uses for the defences of the eye, and other purposes admirably adapted to their habits.

Mr. Read's paper, 'On Vegetable Membrane and Fibre,' was a chemical investigation of equal interest; and the analysis of several plants led to rather novel conclusions regarding the produce of nitrogen, and the difference between fibre and membrane.

Mr. Henslow thought the writer mistaken upon the latter point.

Mr. Hope read a paper, 'On a Genus of Parasite Worms, named *Filariæ*, which infested Human Beings as well as Insects.'

Mr. Nevan detailed some very interesting experiments, illustrated by specimens, on the Effects of Cutting the Bark off Elm Trees, in rings of six or eight inches in breadth. In some cases the upper rim of the bark had shot out roots; whilst, from the lower part of the section, twigs and branches shot up. From these he concluded that the life of trees does not depend on the bark; that the sap descends before leaves are developed; and that new substance ascends from the root. Mr. Lindley doubted the latter part; but the experiments generally confirmed Du Petit Thouar's theory on the structure of wood.

SECTION E. *The papers on the lists were—*

1. Dr. G. C. Holland—Cause of Death from a Blow on the Stomach, with remarks on the means calculated to restore animation suspended by such accident.
2. Dr. H. Carlisle—On the Formation of the Sacrum in Man, and some of the Lower Animals.
3. Dr. John Reid—On the Functions of the Eighth Pair of Nerves—Experimental Inquiry.
4. Dr. J. Black—Account of the late Influenza at Bolton, January, February, and March, 1837.

Dr. Holland, after discussing various opinions on the cause of death from a blow on the stomach, explained his theory to be, that the blow was generally given from below upwards; the blood was thereby forced back on the left ventricle, when, compressed by the shock, death ensued. The best remedy, when insensibility was produced by injury to the heart, was galvanism. Galvanism applied to the heart, when its action had ceased, might cause its contraction. No method was so likely to restore ani-

mation as inflation of the lungs by artificial means, and galvanism applied to the heart, which might restore its wonted action. In all such cases exertions should be made to restore animation, as the symptoms appeared to be those exhibited by drowned persons, who were frequently restored to animation; and life was not lightly to be sacrificed.

Dr. Copland, and Dr. James Johnston of London, Mr. James Murray, and Dr. Williams, doubted the accuracy of Dr. Holland's conclusions; and he replied to their arguments. The other three papers were then read, and the Section adjourned.

SECTION F.

All the papers of this day related to Education, and as follows:

1. Mr. W. R. Gregg—Report on the State of Education in York.
2. Mr. Morritt—Remarks on the "Report on Education in Liverpool."
3. Mr. W. Tate—Remarks on the "Report on Education in Liverpool."
4. Rev. Francis de Soyres—Account of the Educational Statistics of Siddlesham, in Sussex.

The data collected by these gentlemen are no doubt of great importance, but they are also in great detail, and so extensive, that their application to any useful purpose, as they could be reported in a limited periodical, would be impossible.

The same topic has also been largely treated of at other meetings, here and elsewhere, during the week, under the zealous exertions of Mr. Wyse. Central societies of education have formed, and met in considerable numbers; and publications are to emanate from these sources, fully explanatory of their data and their views. We will, therefore, content ourselves with classing together a few of the most striking statements which have occurred to us. In 1836 the population of York was estimated at 28,000, of whom 7000, or one-fourth, were calculated to be between the ages of 5 and 15; and of these, 4700, or 67 per cent, were under a course of nominal instruction in the day and Sunday schools, and 2300, or 33 per cent, were under no course of instruction at all.

In Liverpool, of the whole population of the parliamentary borough in 1835–6, estimated at 230,000, one-fourth, or 57,500, consisted of persons between the ages of 5 and 15, who ought to be under some course of instruction; 31,300 attended no schools whatever. Mr. Merritt entered into several statements, for the purpose of shewing that the proportion of persons between the ages mentioned was one-sixth or one-seventh only, and not one-fourth of the whole; that the number of children to whom education should be furnished, according to this rule, was only 36,516, instead of 57,500, leaving a deficiency of only 9400 without instruction; and from this number he made a deduction on account of children educated elsewhere, leaving the total 8500 only. As to the quality of the instruction furnished, the report gave some disgusting details, and presented a very degraded picture, presenting what he believed to be the exception only, as the rule. There was, however, quite enough of truth in the report to fill the mind of every sensible inhabitant with regret, and he admitted that much had been done since the examination to remove the evil complained of.

Mr. Tate still more severely impugned the Manchester report, and defended Liverpool from the charges it contained. He concluded, It remains, then, with the public to judge whether the society, in their "painful and humiliating conclusions," have conveyed a correct idea of the state of education in this town; or whether, rather, in their excessive zeal for the cause of scholastic reform, and also in their belief that it can be effected in no other manner than by the active agency of the government, they have not indefensibly laboured to stamp the impression of "hopeless insignificance" on "the efforts of private benevolence" throughout this country, and that of utter worthlessness on the exertions of conscientious assiduity on behalf of the rising generation of Liverpool.

Colonel Sykes suggested the propriety of establishing a statistical society in Liverpool.

Lord Sandon thought that Liverpool possessed peculiar facilities for the attainment of statistical information from all parts of the world, and he should be exceedingly happy if what had passed that morning should lead to the foundation of such a society. Liverpool might thus become a great centre and focus of light to the whole country. With respect to education, there was no town with which he was at all acquainted, in which there was not great room for improvement, both in the quantity and quality of education. As the Manchester Statistical Society had made it an attack of inferences and inductions, Mr. Tate should have been allowed more latitude in reply than to have his statements confined to mere figures, especially as there were so many conclusions in the report, which were thus left unanswered.

Mr. M. Martin, author of "The History of the British Colonies," stated, that when preparing his history, he came down to Liverpool, and got more information here connected with the colonies than he could obtain in many of the colonies themselves. He had also got better information respecting London, in Liverpool, than he could get in London itself.

Lord Sandon said he had never known a good object to languish in Liverpool for want of funds.

In regard to Sussex, the result was, that out of a population of 1002, 231 children were receiving some sort of education.

SECTION G.

Mr. Hawkins's bust by machinery.—See last *Gazette*.

Mr. Fairbairn communicated 'On the Result of his Experiments on Hot and Cold Blasts in the Smelting of Iron.' At the request of the Association, he and his colleague had made a series of experiments on the relative strength of hot and cold blast-iron. The investigation had been conducted with much care, and after a great variety of methods. They had varied the form of the metal, and had subjected it to every description of strain. Casts of four feet six inches long, and one square inch in thickness, had been subjected to a strain from weights. Wishing to ascertain whether the iron, having given way to the pressure, only required time to break, they found that one bar of hot blast broke in fifty-seven days, with a pressure of 448 lbs. The first iron which they experimented upon was from the Carron works, hot and cold blast. They found that the Carron cold blasts broke with a pressure of from 394 lbs. to 484 lbs., which gave a mean of 439 lbs. The hot blasts 407·4 to 402·1, which gave a mean of 404·7. Their next experiment was with the cast, 1¼inch in thickness, but with the bar planed down to an inch. The object was to try if the skin or outward surface offered any material resistance. The result was, with the hot blast, 478·6 to 429·3,—mean, 452·3. With the cold blast, 448·6 to 456·6,—mean, 452·6. The next experiments were made on bars cast in the form annexed ⊥. They first broke it with the flange upwards, and then downwards. With the flange upwards, it took a weight of 1050 lbs. before it broke, and there was a considerable deflexion. The ratio was 933·3. When they reversed it, with the flange downwards, and with the same distance between the supporters, it broke with 266 lbs. This was with the cold blast. With the hot blast, 980 and 280. It appeared, from this experiment, that they should be particular as to the form and position of beams. The next experiment was upon castings of a triangular form. From the whole figure the apex broke with a pressure of 980 on the hot blast, 952 on the cold blast. When the apex was off, the frustrum broke with a pressure of 812 hot blast; 742 cold blast: ratio of strength, 913·8. The next experiment was on rectangular bars, one inch thick and three inches long. The result was, that it took 3750 lbs. to break the hot blast, and 3843 the cold blast. Mr. Fairbairn went on to detail his experiments on the different sorts of iron which he had received from Scotland, Wales, Staffordshire, &c. He had, likewise, tested iron at various degrees of temperature, from the freezing point up to a red heat. Welsh iron, at the freezing point, broke at a pressure of 949·6 lbs., at a slightly red heat at 723 lbs. The relation, however, from the result of these experiments was 1000 to 1039 in favour of the hot blast. Cast-iron, when exposed to increased temperature, loses a considerable portion of its strength, and its deflexions are also considerable. A series of interesting experiments had been tried, also, with a view to observing the nature and extent of deflexion in cast-iron. Bars, four feet six inches in length were used, loaded with a weight of 392 lbs. The deflexion was found to be 1786 in the cold blast, 1891 in the hot blast. The breaking weight had been 488 lbs. in the cold blast, in 108 days,—one bar, however, having broken at 35 days. A great number of questions were asked by various individuals in the room, most of them connected with the iron trade; and, as we have remarked, a very strong interest was manifested on this subject. Mr. Fairbairn's results seemed ultimately to refer themselves to the original qualities of the iron, one kind being stronger when smelted by the hot blast, and another when manufactured from the cold. Dr. Thomson's report on the same subject, in the Chemical Section, on Thursday, confirmed these opinions; and it will be seen from the proceedings of the General Committee, that the question was not considered to be settled, since a farther sum was voted to continue and multiply the experiments.

Mr. Ettrick described an artificial horizon which he had invented for the purpose of taking observations at sea, when the natural horizon was obscured, but the heavenly bodies visible.

Professor Henry presented the Section with a set of maps of the canals, railroads, &c. of the United States. In these States, he said, there were about 2000 miles of canal, and 1500 miles of railway. About 3000 miles more of railway were in progress, but had been partially suspended in consequence of the recent commercial embarrassments. Some questions were put relative to the speed of steam-vessels in America. The professor said he was a professor of physics, and not a practical engineer; but he had himself gone on the Hudson at the rate of fifteen miles per hour.

Dr. Lardner entered into an elucidation of the question of the possibility of steam intercourse between this country and India and America, against the practicability of the former of which the doctor declares himself. He supported his reasoning during this and the ensuing

meeting, by the comparison of the logs of government vessels and other data, which provoked a warm debate, in which his facts were impugned, his references challenged, as belonging to notoriously an inferior class of steamers, and himself almost abused by some of his opponents. As the question, however, was left *sub judice*, we shall not enter upon any report of the discussion.

In the evening a gay and crowded *soirée* was opened by the Mayor, in the Town-Hall, which kept people alive till near midnight.

GENERAL COMMITTEE. SATURDAY.

The minutes of the meeting of Thursday were read and confirmed; and the officers for the ensuing year appointed—viz. the Rev. G. Peacock and R. I. Murchison, Esq., General Secretaries; Treasurer, John Taylor, Esq.; and Assistant-General Secretary, John Phillips, Esq. Some changes were made in the Council which sits permanently in London, and is the organ of administration throughout the year, and conjointly with the General Committee during the meetings.

Mr. Murchison stated that he had received a letter from the Earl of Durham, declining the vice-presidency. His lordship had accepted the presidency at the request of the local authorities, and the *contretems* mentioned in our last, we presume, led to this refusal of the inferior station. The Bishop of Durham was proposed in his lordship's stead, and elected, after some playful remarks from Professor Sedgwick and the Marquess of Northampton.

It was then agreed that the next meeting should be in August; and it was understood to be the sense of the Committee, that it should take place as early in the month as the Council could appoint consistently with circumstances.

The grants of money recommended by the Committee of Recommendation were brought forward by Mr. Phillips; and, after some discussion on some of them, agreed to as follows:

In Section A.

50*l.* (renewed) for the Reduction of Observations on Stars 1780-90, from the "Histoire Celeste." Mr. Baily, Mr. Airy, and Professor Robinson.
75*l.* For the Continuation of the Discussion of the Tides at Bristol, confided to Mr. Whewell.
50*l.* Hourly Observations on Meteorology at Plymouth. Mr. Snow Harris.
10*l.* For Repairs of the Anemometer at Plymouth. *Idem.*
500*l.* To extend the Catalogue of the Astronomical Society, and Stars in the Northern and Southern Hemispheres, to 1850. Mr. Baily, Airy, and Robinson.*
100*l.* To continue the Experiments on Waves. Mr. Russell, &c.
100*l.* To ascertain the Action of Gases on the Solar Spectrum. Sir D. Brewster.
40*l.* For the Construction of an Anemometer on the Plan of Mr. Osler, to be employed in Observations at Plymouth.
100*l.* To the Meteorological Committee, to be expended on the Purposes expressed in their Appointment.
80*l.* A Renewal for Experiments with Lenses of Rock-salt.
1350*l.*

Section B.

20*l.* For Experiments on the Composition of Atmospheric Air. Mr. West of Leeds.
50*l.* Chemical Constants. Professor Johnston.
20*l.* For a Series of Experiments, on a great scale, on the Effects of Sea and River Water on Cast and Wrought Iron. To be tried at Dublin, &c.
10*l.* To Mr. Mallet, to continue Experiments of Heat at 212°, on Organised and Inorganised bodies.
80*l.*

Section C.

272*l.* To ascertain the relative Land and Sea; balance of 50*l.* last year, not expended.†
105*l.* To M. Agassiz, to complete the Publication of his Fossil Ichthyology, the 9th and 10th Livraisons of which had appeared, and referred chiefly to Great Britain.
50*l.* A Renewal of the Grant for Investigating the Peat Mosses in Ireland.
20*l.* The same, for Investigating the Deposit of Mud in Rivers.
447*l.*

Section D.

50*l.* Experiments on the Growth of Plants under Glass, excluded from the air (Mr. Ward's).
25*l.* For the Preservation of Animal and Vegetable Substances.
75*l.*

Section E.

50*l.* For the Investigation of the Anatomical Relations of the Absorbent and Venous Systems.
25*l.* For the Effects of Poisons on the Animal Economy.
25*l.* Chemical Analysis of Animal Secretions.
50*l.* London and Dublin Committees to continue Observations on Sounds of the Heart.
25*l.* Sub-Committee of the Medical Section to Investigate Diseases of the Lungs in Lower Animals.
25*l.* Pathology of the Brain and Nervous System—Liverpool and Manchester.
200*l.*

Section F.

150*l.* For Inquiring into the State of Schools in England.
100*l.* Inquiry into the Condition of the Working Population—to be given in Numerical Tables.
450*l.*

Section G.

100*l.* To continue Experiments on the Strength of Cast-Iron, and extended to Wrought-Iron, smelted by Hot and Cold Blasts.
50*l.* To ascertain the Duty performed by Pumping Engines in Cornwall.
100*l.* To ascertain the Amount of Duty performed by one Bushel of Coals, &c., not in the Cornish Districts.
50*l.* Experiments on the Mean Value of Railway Constants.
100*l.* Series of Observations on the Average Locomotive Duty of a Ton of Coals; and
50*l.* to extend the same to the other side of the Atlantic, if deemed necessary.
450*l.*

The total of grants, 3057*l.*

Mr. Phillips having stated that Reports and Researches recommended by the committee, were the other two matters which now came under consideration, the following were agreed to:—

In A. Mr. Wheatstone, a Report on Vision. Sir W. Hamilton, on his Dynamics applied to the Moon.

In B. Professor Leibig, on the present State of Isomeni bodies; and also on Organic Chemistry and Analysis. Professor Johnston, on Inorganic Chemistry.

In C. Mr. Owen, on the present State of Knowledge of the Fossil Reptiles of Great Britain. On the Effects of Voltaic and Electricity on the production of Crystals.

In D. A continuation of Mr. Hooker's Report. Sir W. Jardine, on Salmonidæ; Mr. Gould, on Caprimulgi; and Mr. Hope, on Fossil Insects.

Researches.—To procure tide observations at Liverpool. Astronomical observations, *ibid.* Empirical tables of the moon, and reduce the Greenwich observations. For these considerable sums and influence are requisite, and Mr. Whewell, Mr. Lubbock, and Dr. Traill, were named a committee to apply to government, and take other measures needful to effect them.

Thanks were given to the Trustees of the Clyde Navigation, for the facilities they had afforded to Mr. Russell; and it was resolved to ask the Dock Committee of Liverpool to allow similar assistance to meteorological observation at the lighthouses, &c.

To invite engineers on railways to collect fossils, and send them to the Geological Society in London, distinguishing the beds in which they were found, &c.

In Botany, a committee to collect materials for a Fauna of Ireland. Mr. Vigors, secretary.

In Zoology, to ascertain the modes by which mollusca excavate rocks. Capt. Ducane, for inquiry into the metamorphoses of crustacea, Southampton.

In Medicine, a committee on the physiology of the lungs and bronchia.

That a record of the proceedings of each Section should be entered on books provided for that purpose.

That Statistical information respecting India should be sought by the examination of records in the India House; the condition of the mining population of Cornwall and Wales; and the state of education in Manchester to be ascertained.

A committee, with Sir D. Brewster at its head, was appointed to get together an exhibition of models, &c. at the next meeting (the design having completely failed this year); and, on the motion of Dr. Granville, some useful regulations for the more convenient reception of members were adopted.

After some other discussions, which led to no results, the meeting adjourned, having been engaged during four hours.

In making up our report of the proceedings of Monday, we deferred several papers, viz. 1. Capt. Denham's 'Observations on the Deposits of the Mersey,'—a subject of such vital importance to the trade and navigation of Liverpool;* 2. A portion of the earlier papers and proceedings in the same Section (C), of Geology; 3. Col. Sykes's Report, in the Statistical Section, 'On the Deccan;' 4. Dr. Taylor's 'Details respecting Education at New York;' and, 5. Dr. Traill's Annual Address in the Amphitheatre. In order to make our *résumé* more complete, we now revert to these subjects.

After its formation, and a brief introduction from Professor Sedgwick, Professor Whewell addressed the Geological Section on the proceedings for ascertaining the relative levels of land and sea; or, rather, for establishing data by which to test their future alterations. He was sorry that the report which he had to make was neither complete nor long. Large surfaces of land, it was well known, were gradually becoming lower; but the opinion in question was to know which parts were undergoing these changes. In the Baltic, where there are no tides, it was easy to make marks in the various rocks, and, after a lapse of time, observe the alterations which had taken place; but on our own shores more complicated means were requisite. He then described the levelling of two lines by Mr. Blount and himself, which, when finished and corrected, together with additional data, would enable us to judge of the subject.

Mr. Smith, of Jordan Hill, made some remarks on a collection of shells found round the coasts of Ireland and Scotland, forty feet above the level of the sea, and eight or ten species of which were new. It would give him pleasure to present specimens to the Society.

Section F.

Col. Sykes, being called upon for his special 'Report on the Statistics of the Deccan,' divided the subject into the following sections and subsections, with preliminary observations of much general interest.

Extent and Physical Features: Geology.—Area, elevations, rivers, roads, bridges, mountains, &c., ghats, valleys, tenures, encampments, columnar basalt, schistose structure, basalt en boules, dykes, ferruginous clay, pulverulent limestone, nodular limestone, loose stones, rocky heaps, sheets of rock, structure and mineral composition of rocks, minerals, ores, natural salts, no organic remains, thermal springs, extent of trap region, laterite, granite, sedimentary rocks. *Climate.*—Barometer, atmospheric tides, temperature, monthly means, diurnal range, mean temperature, moisture, rain, winds, hot winds, whirlwinds, hail, dews, fogs, salubrity of the climate. *Botany.*—Cultivated fruits, wild fruits, agricultural products, wet season harvest, dry or spring season harvest, garden produce, edible roots, grasses, wild oil, tanning and medicinal plants, European fruits, flowering plants, timber trees. *Zoology.*—Quadrumana, cheiroptera, plantigrada, digitigrada, insessores, rasores, grallatores, natatores, ichthyology, reptilia, crustacea, testacea, entomology. *Civil Divisions.*—Poona collectorate, pergunnahs, towns, hill-forts, &c.; Ahmednuggur collectorate, talooks, pergunnahs, towns, forts, &c.; Khandeish collectorate, pergunnahs, towns, &c., rivers, Boodh cave-temples; Dharwar collectorate, talooks, pergunnahs, towns, rivers, hill-forts, &c. *Population.*—Proportion of the sexes, constituents of population, castes, births, deaths, and marriages; proportion engaged in agriculture; proportion to the square mile, to a house,

* It was mentioned, that government would be solicited for 2000*l.*, to co-operate in effecting this great astronomical object.

† Captain Pollock made a complaint of the conduct of the committee in not calling for the assistance of all its members in this inquiry, which was explained by Mr. Whewell.

* Want of room compels us further to postpone this interesting document until next week.

to villages, to towns; population of southern jagheerdars and Rajah of Sattarah's territories. *Abstract of the Population of the late Peshwa's Territories: Education.*—Proportion of schools in the different collectorates, different kinds of. *Irrigation.*—Quantity of water supplied by well-bucket, &c.; general observations. *Agriculture.*—Agriculture of the wet-season crop (hilly tracts), wet-season crop (desh), ploughing, treading-out, farm-yard, winnowing, preserving grain; preparing grain for food, pounding, grinding, sugar-mill, oil mill, average size of farms, proportion of yoke cattle, milch cattle, ploughs, &c. *Land and other Tenures.*—Estates, hereditary and freehold, meeras tenure, kowl istawa owand, tenures marking alienation of lands, jagheer, enam, surinjam, doomalla, easaphut, deshmook and desaee, deshpandeh, pateel, koolkurnee; mahr's tenure, bara bullooteh, militia, chowgulla, havildar, tulwar, ramoosee, bheels, sheteh: sharers in village revenues. *Revenue.*—Amount and account of, per centage of, branches of, viewed as a capitation tax, average village; sources of revenue, land, shops, excise, transit duties, tabular view of expenses and charges upon the revenue; number of cultivators, land revenue in the different collectorates. *Assessments.*—General observations, various names applied to different portions of land for assessment; chief assessment upon land; sostee, or permanent assessment; varieties of assessment, bhagaeet, or garden; zerhaeet, or field, &c.; average per begah, garden, and field; extra cesses, names of; shop taxes; evils of extra cesses; description of village accounts and documents. *Wages.*—Agricultural labourers', artificers', &c. in kind or money; table of rates of all classes of servants, artificers, &c. *Manufactures.*—Names and prices of the few remaining. *Transit Duties.*—Transit duties, how paid. *Coins.*—Silver and copper. *Weights and Measures.* Of capacity, grain, oil, milk, and spirit; weights, goldsmiths', itinerary and long, superficial; weights and measures, how derived. *Army.*—Constitution, stations. *Justice.*—Administration of; police, return of committals, trials, &c. for four years.

The following were some of the details with which the subject was illustrated.

The four collectorates of the Deccan, within the province of Bombay, contain a population of 3,285,985 souls, and 48,987 square miles, or about sixty-seven inhabitants to the square mile; lying on an elevated plateau, formed by the ghats, and descending by a succession of steps to the Coromandel coast. The Poona collectorate contains 8281 square miles; 550,313 inhabitants; 1827 towns and villages; and 114,887 houses, averging four and a fraction inhabitants to a house, and 247 to a village, exclusive of the city of Poona, which contains a population of 81,000. The rivers in the Deccan, during the monsoons, present magnificent streams of water; but, in the dry season, either a broad sandy plain, or a mere thread of water. The roads, with the exception of two great military roads, are untouched by art; and few of the rivers can boast of a bridge. With respect to geology, there are no organic remains, and probably no region in the world, in which the trap-formation prevails to so great an extent. In the Deccan there are 200,000 square miles, without the intervention of any other rock whatever. This is succeeded by granite and other rocks of igneous origin; so that, from the twenty-fifth degree of latitude, down to the coast of Coromandel, including Ceylon, there are about 700,000 square miles of rocks originating in fire, probably without any of that succession which is found in Europe of rocks belonging to a newer formation, or to a middle formation. The tides of the atmosphere are one of the principal features connected with the climate of the Deccan. These tides, like those of the ocean, rise and fall twice within the twenty-four hours, at stated periods; and this in so marked and defined a manner, that the results can be determined previously almost with perfect certainty. During observations of four years' continuance, made with different instruments, there was no variation in the order of the rise and fall, though there was occasionally some little variation in the degree. The atmospheric tides prevail from the equator to the poles, and are observable to the sixty-fourth degree of latitude, the maximum being at the equator, the minimum at that degree. Although they exist in our own latitudes, it requires the mean of many observations to determine their amount. In the Deccan, as throughout the world, the barometer ranges highest in cold weather, and diminishes during the monsoon. The temperature at half-past nine in the morning is the mean temperature of the year; so that a register kept at that hour gives the mean temperature of the year. With regard to the quantity of rain, the clouds containing the water drawn from the ocean, by the action of the sun, beat against the ghats, and the rain which falls there is three or fourfold the proportion of that which falls 30 or 40 miles to the eastward. At Poona, which is not 100 miles east from Bombay, the annual fall of rain is only 25 inches, whilst in Bombay it is 82. Hail only falls at the very hottest season, with the temperature from 85 to 100. The air is perfectly clear; suddenly the horizon is overcast, the dust is blown up in dense masses: in the midst of this comes claps of thunder, perfectly astounding, and down comes a shower of hail, some of the stones excessively large, and doing a great deal of mischief. This is followed by a deluge of rain for an hour or two. Dews are very copious,—fogs little known. The climate is very salubrious. In his (Col. Sykes's) camp, consisting of 100 persons, not a single death occurred in six years; and there was only one case of sickness which he did not cure without medical aid. In 1828, the deaths were 1·82 per cent, or one in 55 persons, not including cholera, or one in 40, including cholera; so that even in India, where this frightful disease originated, it appears to be much less serious than was supposed. Dr. Lawrence had medical charge of a regiment of natives 1000 strong for several years, and lost only 0·85 per cent, or less than one per cent per annum. With respect to botanical and agricultural productions, there are 45 cultivated fruits, including six or seven species of the grape; and 22 wild fruits, including the mangosteen, the date, &c. &c. Col. Sykes has introduced five or six varieties of the grape into this country, and some of them are now flourishing in Lord Powis's gardens at Walcott, and others in the gardens of the Agricultural Society. There are two harvests in the Deccan, one called the wet-season harvest, the other, the cold or dry-season harvest; and both of distinct kinds of grain and pulse—the wet, in the hilly tracts, principally of rice. The productions of some of the grains is perfectly astonishing. Four species were mentioned—one producing 33 stalks, and 61,380 grains from one seed; another, 16,960; a third, 2985; and a fourth, 1850. One species of wheat, taken out of a field at random, and now in his possession, contained 25 stalks and 1450 grains from one seed, the average on tolerable land being 8 stalks to each plant. There are 46 articles of garden culture; and, in mentioning those used for culinary purposes, Col. Sykes stated, that the natives are quite as carnivorous as the inhabitants of Europe, so far, at least, as mutton is concerned. The grasses are innumerable, some of them useful for cordage. There are few ferns, no heaths, and no oaks, elms, or hazles. The zoology of the Deccan exhibits specimens of most of the different orders. The wild dog is a native of the ghats. The domestic poultry of this country is supposed to have originated in India, the two species being identical. Most of the wading and swimming birds are identical with those of Europe. With respect to population, the proportion of male to female births, which in England is 100 to 93—in the Deccan is 100 to 87; and this difference obtains, with very little variation, throughout India, modified by the singular fact exhibited in the excess of grown up women over men. Sir Stamford Raffles, in his account of the island of Java, states that the proportion of births was 100 males to 82 females; but that the same disproportion did not exist between grown up people. In the Deccan, the preponderance of male over female children is very strongly marked; but a greater mortality amongst the males at a subsequent period makes the females outnumber the males. The same law, therefore, appears to prevail both within and without the tropics. The average number of deaths in 32 pergunnahs of the collectorate of Poona, was one in 37; but that was in an exceedingly bad season, when the cholera prevailed. The proportion of marriages is very nearly the same as in England and France,—it being one in 125 in Poona, one in 128 in England, and one in 130 in France. In speaking of the castes, or tribes, Col. Sykes stated, that the Mussulmans, who for so many centuries had the government of India, never amounted to one fifteenth part of the whole population of the empire; but being in various places in the proportion of 4, 6, or 8, or more, per cent to the rest of the population. With respect to education—in one province there is only one school to 2452 inhabitants; in another, one to 4639; in a third, one to 3337. The tenures of land are exceedingly numerous; but the chief part is freehold, which has been acknowledged by the native governments: and there are many descendants of those amongst whom the land was originally divided now in actual possession. Artisans of various kinds do the work of the farmers in their respective branches, and are paid by allotments of land, and a per centage on the produce. The revenue derived by the government is 82 per cent in the aggregate from land, and altogether averaged 8s. per annum for each individual, viewed as a capitation tax. The native manufacture of silk and cotton has been almost totally suppressed by the machinery of England. There are few other manufacturing products of any value, and these are not produced in the Company's territories, with one or two slight exceptions. The transit duties on the conveyance of goods are exceedingly onerous, and form a great impediment to commerce.

At the conclusion of the paper, a vote of thanks was given to Col. Sykes; and, in the course of a discussion which took place at a later period in the day, several questions were put to him, in reply to some of which he stated, that the wages of a head carpenter, as compared

with the price of grain, were from 25*s.* to 30*s.* a month; a common carpenter, 21*s.* to 25*s.*; a smith, the same; field labourers, 14*s.* a month for a man; from 7*s.* to 14*s.* for a woman; and 6*s.* for a boy; finding themselves in every thing, and working from sunrise to sunset. He was afraid that the loss of the two principal manufactures was not made up or compensated by any increase of raw produce for exportation. The cultivation of various articles for export might be greatly increased, to the advantage both of the natives and of the people of this country. It was an especial object of the Agricultural Committee of the Royal Asiatic Society in London to point out these articles, many of which were not even known in this country; as, for example, several kinds of oils, and many species of fibrous plants, suitable for cordage. The breadth of land under cultivation has not been increased of late years. The instruments were so rude and simple, that, were not the returns naturally so great, and the cost of production so trifling, the people could not live. The condition of the labouring classes is little better than that of the people in many parts of Ireland. The system of transit duties was under the serious consideration of government. Until within the last 20 years there had been constant intestine wars, which were now put an end to, under the influence of the British government.

'Abstract of the Report on Education at New York,' read by Dr. W. C. Taylor, on Monday, at the Statistical Section, and only briefly referred to in our last.

The regents of the university in the state of New York are required by law to make an annual report to the legislature on the state of education in the several colleges and academies subject to their visitation. Accurate forms of returns are sent to these institutions, and, though they have not all been filled as completely as could be desired, they enable us to form a pretty accurate view of the present condition of education in that state, and its tendency to progressive improvement, especially as regards the instruction of the higher and middle classes. In the report itself facts and opinions are blended together; but, for the purpose of bringing the results before the notice of the Statistical Section of the British Association, it has been deemed advisable to abstract the most striking facts which can be numerically expressed, and to avoid all inferential deductions; for, though statistical science is pre-eminently suggestive, experience has shewn that the passage from the figures of arithmetic to the figures of speech is more agreeable than useful. Under the direction of the regents, departments have been added to the collegiate systems for the instruction of common school teachers. The whole number of students in these departments is 228—an increase of 110 in the year. The inadequate compensation paid to teachers has hitherto deterred many from entering the profession; but, since these departments were instituted, the standard of common schools has been greatly raised, and ordinary members of them obtain from 50 to 75 per cent more than was paid to the best teachers six years ago. The average was below twelve dollars per month; but some of the instructed teachers now obtain more than eighteen dollars. The whole number of students belonging to academies under the control of the university is 6056. The number of students claimed by the trustees to have pursued classical studies, or the higher branches of English education, or both, for four months of said year, is 4590. The amount of money apportioned by the regents from the income of the literature fund is 12,000 dollars.

	Dollars.
Value of land and buildings belonging to academies	460,503
Value of other real estate	44,222
Value of philosophical apparatus and library	32,927
Value of other personal property	154,712
Tuition money for year ending March 1, 1837	86,431
Interest on income from permanent funds	12,898
Salary of teachers	93,062
Number of books in libraries of academies,	10,324
Number of teachers	261

whence it follows that the average income of each teacher is about $356\frac{1}{2}$.

The number of academies reporting to the university, including male and female seminaries, is 69; the subjects of study are thus enumerated:—

Arithmetic is taught in all the academies; Algebra, do.; Architecture, in 1; Astronomy, in 56; Botany, in 30; Bookkeeping, in 45; Biblical Antiquities, in 2; Biography, in 1; Chemistry, in all; Composition, as often as once a fortnight, in all; Conic Sections, in 4; Constitution of the United States, in 15; Do. of the State of New York, in 5; Elements of Criticism, in 8; Declamation, in all but the female schools; Drawing, in 14; Dialling, in 1; English Grammar, in all; Evidences of Christianity, in 7; Embroidery, in 1—Ladies' Institution; Civil Engineering, in 4; Extemporaneous Speaking, in 3; French Language, in 51; Geography, in all; Physical Geography, in 4; Geology, in 5; Plane Geometry, in all; Analytic Geometry, in 4; Greek Language, in all but 5; Grecian Antiquities, in 4; German Language, in 1; General History, in all; History of the United States, in 50; History of New York, in 3; Hebrew Language, in 4; Italian Language, in 3; Latin, in all but 3; Criminal and Mercantile Law, in 2; Logic, in 28; Levelling, in 2; Logarithms, in 2; Vocal and Instrumental Music, in 5; Vocal alone, in 2; Instrumental alone, in 6; Mapping, in 5; Mensuration, in 12; Mineralogy, in 4; Mythology, in 3; Natural History, in 17; Navigation, in 9; Nautical Astronomy, in 1; Natural Theology, in 13; Orthography, in all; Natural Philosophy, in all; Moral Philosophy, in 37; Intellectual Philosophy, in 39; Penmanship, in all; Political Economy, in 1; Painting, in 6; Perspective, in 1; Physiology, in 3; English Pronunciation, in 1; Reading, in all; Rhetoric, in all but 6; Roman Antiquities, in 10; Stenography, in 2; Statistics, in 1; Surveying, in 49; Spanish Language, in 5; Trigonometry, in 23; Topography, in 1; Technology, in 4; Principles of Teaching, in 14.

It would be very desirable to obtain similar returns respecting the branches of study open to youth of the middle and upper classes in England, but such information could not be obtained by individual enterprise; the person making the inquiries would probably receive, in most instances, a sharp rebuke for his impertinent curiosity, and would assuredly be refused the means of verifying the accuracy of the returns. Were such an inquiry instituted by authority, it would probably be found a valuable addition to the American form—to have columns for the number of students in each branch, and the length of time devoted to its study. In the American report there is no notice of any provision for physical training; should similar inquiries be made here, it would be well to have returns of the size of playgrounds and the supply of gymnastic exercises. The American report contains the names of the various books used in the academies: the only remark that need be made on this return is, that a preference seems generally to be given to the works of American authors. Meteorological observations, on the plan recommended by Sir John Herschel, have been recorded at fifty-three academies: some of these are open to suspicion of inaccuracy, but the regents have a plan under their consideration for rendering them more perfect and complete in future. The charges to students vary considerably in the different academies. Elementary instruction is generally rated from $2\frac{1}{2}$ to $4 per quarter; and the higher instruction varies from $5 to $12. The Albany Female Academy, which appears to be of the highest rank, charges $225 annually for board and tuition in all branches. In some of the academies emulation has been discouraged, as a dangerous stimulant of action; in others, it is still deemed advisable to offer premiums for exertion. Both parties affirm that experience has proved the correctness of their views, but neither have supported their assertions by a reference to appreciable facts. In this year's report, the latitude and longitude of the different academies are given, their elevation above the level of the sea, and such topographical remarks as best elucidate the salubrity of their situation. These are the chief statistical results of the report: the remarks on the effect of moral discipline, and on new elucidations of the science of education, though very valuable, could not be noticed in this section.

Dr. Traill, after an apologetic exordium, said the British Association was undoubtedly suggested by the successful efforts of the philosophers of Germany, within the last few years. The obstacles to the free intercourse between scientific men, in that part of Europe, had always been felt as a great bar to the advance of science. Under such a system, those who, in sequestered regions, had long pursued laborious investigations, had often the mortification to discover that they were following paths trodden by others, or in which they had been completely anticipated by more fortunate inquirers. To obviate such grave inconveniences, and to promote social intercourse among men of science, scattered over wide regions, separated by physical and political obstacles, though connected by one common tongue, were the objects of that great Continental Association; and that these have been, to a considerable extent, realised by the annual assemblages of the illustrious sons of Germany, is generally admitted. In our more united and highly favoured land, the facilities of intercourse between its most distant points, the less isolated position of our philosophers, undoubtedly render the progress of science less dependent on such general associations of its cultivators than in Germany; yet it has never been doubted that the personal intercourse of men engaged in similar pursuits is favourable to the progress of philosophical investigations, by the direct assistance derived from the experience and suggestions of others, and by fostering that generous emulation in the search after truth which imparts a wholesome stimulus to mental exertion, while it tends to smooth the asperities occasionally engendered by controversy, even in the abstract sciences. Men accustomed to meet and act together for one great end, naturally and insensibly imbibe the social spirit—scientific jealousy and personal rivalry are softened by mutual approximations; and individuals composing the Association, like members of the same family, learn to temper the pursuit of personal distinction by an honest exultation in whatever redounds to the honour and celebrity of the body to which they belong. These advantages the British Association shares in common with many other societies; but it possesses characteristics peculiarly its own. It can scarcely reckon a period of infancy: it sprung at once from the conception of its founders, like Pallas from the head of Jove, in the perfection of youthful vigour; secure in the panoply of rectitude of purpose against open or secret hostility. It quickly numbered in its ranks the *élite* of the philosophy of the United Kingdom; and, strengthened by the accession of foreign associates of distinguished reputation, it has extended its views beyond its original horizon, and has attained a colossal magnitude that distinguishes it above every other scientific association in the

British empire. This Institution ought not to be considered as the rival of any of the previously existing philosophical establishments which give lustre to these kingdoms. It, indeed, receives communications on every branch of scientific inquiry; but it professes to publish none of the numerous contributions which have given rise to the interesting and animated discussions in its different Sections: a short abstract of these papers is all that it attempts to promulgate; but the distinguishing features of its publications are those invaluable reports on the progress of science which the Association has confided to some of its members, especially selected for that important duty. The advantages thus conferred on general science will be best appreciated by persons whose studies are directed to any of the subjects discussed in the reports, and who have once felt the want of an accurate analysis of what had been recently added to our previous stock of knowledge; but it would be impossible to calculate in how many instances those abstracts of precise and useful information have saved the time, and abridged the labour, of the retired student, in tracks already explored by other philosophers. Another peculiarity in the publications of the Association consists in the circulation of desiderata in different branches of science. The attention of their cultivators, thus drawn to the principal deficiencies in each, has already filled up various chasms in the paths of intellectual exertion, and stimulated to inquiries that cannot fail to lead to important results. It soon became apparent that the British Association must exercise a powerful influence on the general diffusion of science, and could undertake, or materially promote, investigations to which individual research and unaided exertion are utterly inadequate. Its annual migrations, and the comparative ease of admission into its ranks, have unquestionably increased the taste for scientific disquisition; and, although it would be absurd to suppose that all who seek for enrolment in the Association are destined to extend the boundaries of science, who can believe that familiarising large masses of the community with such investigations, and exhibiting how the highest branches of philosophy may be made available to the purposes of life, will fail to promote the avowed purpose of our meetings? Who will venture to deny, that the contemplation of the galaxy of illustrious men, mustered on occasions similar to the present, has often proved the first impulse to the secret aspirant after honourable distinction — has afforded the Promethean spark that kindled the sacred flame in the breast of slumbering genius? The Association has not failed to use its influence in stimulating our rulers to aid the progress of science. At its instigation, the British government has taken up the task of the reduction of the enormous mass of observations on the heavenly bodies, accumulated since 1750, at the Greenwich Observatory — which, though collected at a great expense to the nation, and by the exertion of consummate skill in the observers — which, though pronounced by the highest authorities in Europe to be of the utmost moment to the future progress of astronomy,— have been permitted to remain a rich, but unexplored, mine of facts. The voice of our petition has been heard — the work has been auspiciously begun; and 500*l.* have been assigned by the Treasury for the commencement of this great national work. The subject of the tides, so strangely neglected in this great maritime country, from the period of the promulgation of the Newtonian theory to our own times, has engaged the attention of the Association from its commencement. The advances which have recently been made on this subject, and which have greatly altered the aspect of that branch of science, had chiefly for their original basis the very valuable tide observations made in this port, many years ago, by Mr. Hutchinson, a dock-master, embracing an interval of above thirty years. The originals are preserved in the Lyceum Library of Liverpool; and, by the liberality of the proprietors, have been confided to the hands of Mr. Lubbock, under whose direction the discussion of them, ordered by the Association, has thrown a new light on the laws of tidal phenomena. Since that time, the earnest representations of a distinguished associate, whom this county claims as a native, have given rise to a most important set of observations on the tides. Mr. Whewell, by personal application to the chief of the coast-guard service, and solicitation to the Admiralty, has procured the completion of a continuous series of observations, at upwards of five hundred stations, along the coasts of Great Britain and Ireland. They were continued for a fortnight in June 1834, and again in June 1835, when they were extended from the mouths of the Mississippi to the northern extremity of Europe. These observations have been discussed at the expense of the Admiralty; but, as I shall presently mention, the Association has voted a large sum to be applied by Mr. Lubbock to the same subject. These discussions have, within the last few years, led to very curious results: for instance, to the fact of the rise of the mean level of the tides, in proportion to the fall of the barometer, and the existence of a diurnal tide — *i. e.* the difference between the morning and evening tides of the same day. This diurnal tide, it may be interesting for the inhabitants of Liverpool to know, was first marked in the tide tables constructed by a young ingenious townsman, Mr. Bywater, jun., who has, unfortunately for science, died since the last meeting of the Association. The importance of the subject, and the success already obtained, have encouraged the Association to direct the discussion of the tidal observations recorded at the port of Bristol, and at the London Docks; and to supply the means of defraying the necessary expense. The influence of researches on tidal waters to navigation and to commerce are too obvious to require illustration: but perhaps it may not be unsuitable, in this place, to refer to the deductions of our eminent associate, Capt. Denham, on the capability of the Mersey "to command a navigable avenue to the ocean, so long as its guardians preserve the high-water boundaries from artificial contraction." It may also be stated that, in our Transactions, this gentleman has recorded his most important general inference (drawn from a connected series of observations on the tides, which the liberality of the Dock Trustees of Liverpool enabled him to carry on) — *that there is one invariable mean height, common to neap and spring tides* — the half-tide mark — a point from which engineers, geologists, and navigators, will henceforward commence their calculations, and adjust their standards of comparison. The Association made application soon after the meeting at Edinburgh for the resumption of the Trigonometrical Survey of Scotland; a work imperiously demanded by the imperfect state of our best maps and charts of that part of the island, either for the purposes of geology or navigation. It is needless to give further proof, than that parts of several of the large islands at the mouth of the Clyde are laid down several miles out of their true position. The magnificent scale on which the survey of Ireland is now carrying on, emboldened various scientific societies of Scotland this year to memorialise the government on the subject. I am happy to add, that the applications have been successful, and the triangulation of Scotland will recommence early in 1838. The British Association may also boast, that at its instigation our illustrious associate, Arago, moved the Bureau des Longitudes to solicit from the French government the publication of the series of observations on the tides at Brest, and a reduction of the astronomical observations made at the Ecole Militaire. The Brest observations have been printed, and a copy of the valuable documents put in the hands of one well able to appreciate them. At the Dublin meeting, a committee was appointed for representing to our own government two objects important to science, which can only be accomplished in a satisfactory manner by the rulers of a powerful nation, or by an union of governments in the cause of philosophy. The first related to the establishment of Magnetical and Meteorological Observatories, in different parts of the earth, furnished with proper instruments, and in which the observations should be conducted on acknowledged and uniform principles. The extent, and the variety of climate, of the British possessions, indicate them as favourable points for such establishments, which have already been commenced in France and its dependencies; and may hereafter, by the co-operation of the several governments of Europe, and of our transatlantic brethren, be extended over a large portion of the civilised world. The second suggestion was the importance of an Antarctic Expedition, for prosecuting discoveries and observations in Geography, Hydrography, Natural History, and, above all, Magnetism, with a view to determine the positive southern magnetic pole or poles, and the direction and intensity of the magnetic force in antarctic regions. The East India Company was likewise to be requested to favour the same objects, especially at their establishment at Madras. The General Committee some time ago made application to the authorities, both in France and this country, respecting some mode of instituting a reciprocal protection to literary property. Might I venture here to allude to a recommendation which I hope the Association will not fail to leave in Liverpool, for the promotion of a scientific object of immense consequence to this port — the establishment of an observatory in or near Liverpool. The adoption of such suggestions, while conferring an incalculable benefit on science, would rear a proud, unperishable, and bloodless monument to national greatness. These statements might be a sufficient answer to a question, sometimes put in tones of captious sarcasm. What has the Association directly contributed to the progress of useful knowledge? Without again appealing to the very admirable reports on the progress of science published in our Transactions; without again claiming merit for the suggestions and efforts already noticed,— I should fearlessly answer such cavillers, by an appeal to the value and number of the communications which have occupied the different Sections, at each annual meeting, and which contain the application of pure science to important questions in Physics, or of experimental investigation to numerous branches of knowledge. I would point to the valuable researches which have been undertaken and completed at the request of the Association, among which it may be permitted to indicate the following memoirs:— The comparison of the standards of Linear Measure, made by the late Mr. Troughton, for

the town of Aberdeen, and the Astronomical Society of London, which were confided to Mr. Baily—a comparison of much consequence, as the *standard yard*, by the same eminent artist, was lost in the fire which consumed both houses of parliament; On the Investigation of the Impact upon Beams, when struck by bodies of different weight, hardness, and elasticity, by Mr. Hodgkinson; On the Direction and Intensity of the Magnetic Force in England, Ireland, and Scotland, by Professor Lloyd, Major Sabine, and Captain James Ross; On the influence of Height above the Sea on Magnetic* Intensity, by Professor Forbes—from which it appears that the horizontal intensity diminishes $\frac{1}{1000}$ of the whole, for every 3000 feet of vertical ascent; On the quantity of Rain falling at different heights above the surface of the ground, made at York, by Professor Phillips and Mr. Gray; On the determination of the mass of the planet Jupiter, by the Astronomer Royal; On the Horary Variations of the Barometer, Thermometer, Hygrometer, and Whewell's Anemometer, by Mr. Snow Harris, part of which has already appeared, and of which the sequel will be laid before this annual Meeting; On the Duty performed by Cornish Steam Engines, by Mr. Enys; On the Ratio of the Resistance of Fluids to the Velocity of Waves, by Mr. Russell and Mr. Robison, of which we expect to receive an account on this occasion. We may also be permitted here to allude to some highly interesting investigations, still in progress, under the auspices of the Association, such as—Observations on the Temperature of Springs and Deep Mines, by Instruments procured and verified by the Meteorological Council, which are already placed in various districts of Great Britain and Ireland, and also in Peru, under the direction of our scientific associate, Mr. Pentland, and from which results most interesting to Geology are anticipated; On the Temperature of the strata at different depths near Edinburgh, by Professor Forbes, for ascertaining the rate of the transmission of Solar Heat downwards; A continuation of Mr. Vernon Harcourt's experiments on the effects of long-continued Heat on Rocks and other bodies; Experimental Investigations into the Fabrication of Glass, by the same gentleman and Dr. Faraday; A Systematic Catalogue of all the Organised Fossils of the British Islands, by Professor Phillips; An Experimental Determination of the Strength and other Mechanical Properties of Iron obtained by the Hot and Cold Blasts, undertaken by Messrs. Hodgkinson and Fairburn; Analysis of Iron in the different stages of its Manufacture, and an Extension of the Tables of Chemical Constants, by Professor Johnston; Statistical Returns of the State of Education in our great Towns; An Examination of the Statistical documents preserved in the India House, by Professor Jones; besides the discussion of numerous very interesting contested points in Natural History and in Medicine. These are satisfactory evidences of the activity of the Association; but it has not scrupled also to afford pecuniary assistance, when such aid appeared requisite to ensure success. It is true, that the moderate sum, payable on admission into the Society, seems more suited to the finances of the majority of philosophers, than to the support of extensive enterprises; yet the numbers, annually desirous of admission, supply funds, adequate to important undertakings; and the power thus given to the General Committee is acknowledged to have been exercised with a sound discretion.

Dr. Traill then recapitulated the principal grants already recorded in our pages, and commented on the handsome use made of them by the parties to whom they were entrusted, several contributing their own labour, and all employing the most economical means to accomplish the ends in view. He also gave a critical analysis of the volume containing last year's reports and notices, which it seems to us unnecessary to recapitulate, as we have given the entire substance in our own preceding Numbers, and the details are to be found by those who require them in the volume itself.

* Referring to the paper 'On the Construction of Magnets,' in page 567, middle column, we are informed that Mr. Holden maintained that cast-iron palisades became magnets, by standing a few days in an upright position; but whether they would retain the magnetic power, if reversed, he thought very questionable. In answer to Mr. Christie, he stated that, in his practice, he had found that good steel, hardened and tempered to a spring temper, about that of a good sword, both received and retained the magnetism,—as he had needles which had retained it more than twenty years.

REVIEW OF NEW BOOKS.

Ernest Maltravers. By the author of "Eugene Aram," "Rienzi," &c. 3 vols. 12mo. London, 1837. Saunders and Otley.

YEARS have passed since we first offered our warm and hopeful praise to the young writer whose promise was of that high and creative order which belongs to genius and to genius alone. Since then, what changes have passed over the earth! opinions have altered as much as tastes;—a more earnest and examining spirit has entered into even the lightest branches of literature, and no writer now could take a high stand who aimed only at amusing the reader. Mr. Bulwer has given a character which, until he came, was unknown to the novel in England. Gifted with first-rate powers of exciting sympathy—possessed of even architectural skill in the conduct of his narrative—able to fling over his pages the flashing lights of wit, and the picturesque graces of description—he has made his talents always subservient to his principles. He has never lost sight of a great whole, and a noble result. Those who read for the sake of the dramatic story, or the exquisite style, do Mr. Bulwer but half justice. Every work of his is another step in the progress of his own and his time's mind. His stories are the solutions of some moral question, and every character is a curious analysis of that "mysterious thing, the heart of man." The ideal of the good is for ever before him. The crime and the folly, the weakness and the vanity, are dissected with an unsparing hand; but faith in his kind, and an almost religious entering into its noblest hopes, are inseparable from his elevated and generous standard. Genius must turn infidel to itself, ere it disbelieve in the beautiful which is the true. The work before us appears a choice of subject peculiarly adapted to Mr. Bulwer's powers; it is the history of a mind, and a mind of genius. Who can understand its workings better than he whose mind is cast in the very mould that he draws? Not but that we enter our protest against confounding the writer and the written together. The author's impulses and experiences are cast upon his pages rather than himself: it lowers all criticism taking this personal tone, and narrows most unjustly the world of poetical conception. If one character be supposed to be the shadowing forth of its inventor, why not another? Mr. Bulwer may as well be Lumley Ferrers, as Ernest Maltravers—both are drawn to the very life. Indeed, the subtle investigation into character is very remarkable; every individual is real, apart, and seems to put us in mind of some one that we have known; but each portrait, with all its strong likeness of humanity, is not the less a type of that inward world which produces such results from causes which are the pulses of the machine. One great merit of Mr. Bulwer is, that he never confounds the social and the natural world—he sees society what it is, base, hollow, false; all that is bad, or rather, perhaps, what is mean in us, floating on the surface—but he also knows that there is another and a better world even within ourselves. To call forth its diviner glimpses; to bring into more constant operation our more kindly feelings and our more lofty thoughts; to awaken the light which should be at the heart, is a writer's highest duty; and who has fulfilled this duty more gloriously than Mr. Bulwer has done? The present volumes are written to develope the poetical character in *Ernest Maltravers*; but we will give his object in his own words.

"He is a man with the weaknesses derived from humanity, with the strength that we inherit from the soul; not often obstinate in error, more often irresolute in virtue; sometimes too aspiring, sometimes too despondent; influenced by the circumstances to which he yet struggles to be superior, and changing in character with the changes of time and fate; but never wantonly rejecting those great principles by which alone we can work out the science of life—a desire for the good, a passion for the honest, a yearning after the true. From such principles, experience, that severe teacher, learns us at length, the safe and practical philosophy which consists of fortitude to bear, serenity to enjoy, and faith to look beyond! It would have led, perhaps, to more striking incidents, and have furnished an interest more intense, if I had cast Maltravers, the man of genius, amidst those fierce but ennobling struggles with poverty and want, to which genius is so often condemned. But wealth and lassitude have their temptations as well as penury and toil."

The story begins with a dream of poetry and love—a dream soon and rudely broken, yet exercising its influence to the last: and herein is finely wrought the true moral of punishment. Ernest begins his career with an error, and its consequences endure. The feverish happiness contrasts with all that follows: memory always exaggerates, and the first step is taken in suffering, when there is that in the past to which we perpetually refer in the present. The whole history of Alice is terribly touching, because terribly true. We might shudder even while standing in the sunshine, to think of the fearful suffering by which we are surrounded; but hard as physical anguish is to bear, harsh as is the lot of poverty, with its cold and its hunger, yet pain takes no shape so utter in its torture, as when it makes its ministers of the affections. No evil is like the evil within ourselves. In perpetual contrast with each other, the ideal and the real standing side by side, are the two principal characters. Ernest Maltravers imaginative, therefore, high-minded, actuated by a consciousness of power, and the responsibility that power owes to its kind; Lumley Ferrers, shrewd, calculating, selfish, and referring all things to his own miserable interest: such are the two that in these pages work out their most opposite destinies. Ernest Maltravers is only the beginning of life; the lesson of the close remains to be given—we trust that Mr. Bulwer will not pause till it be complete. We shall now proceed to take some specimens from these pages, which, however, require to be read entire; "here a little, and there a little," will do them but scant justice.

A Character.—"His name was Lumley Fer-

rers, his age about twenty-six, his fortune about eight hundred a-year: he followed no profession. Lumley Ferrers had not what is usually called genius, that is, he had no enthusiasm; and if the word talent be properly interpreted, as meaning the talent of doing something better than others, Ferrers had not much to boast of on that score. He had no talent for writing, nor for public speaking, nor for music nor painting, nor the ordinary round of accomplishments; neither at present had he displayed much of the hard and useful talent for action and business. But Ferrers had what is often better than either genius or talent; he had a powerful and most acute mind. He had, moreover, great animation of manner, high physical spirits, a witty, odd, racy vein of conversation, determined assurance, and profound confidence in his own resources. He was fond of schemes, stratagems, and plots—they amused and excited him; his power of sarcasm and of argument, too, was great, and he usually obtained an astonishing influence over those with whom he was brought in contact. His high spirits, and a most happy frankness of bearing, carried off and disguised his leading vices of character, which were an extraordinary callousness of affection, and an insensibility to moral principles. Though less learned than Maltravers, he was, on the whole, a very instructed man. He mastered the surface of many sciences, became satisfied of their general principles, and threw the study aside, never to be forgotten (for his memory was like a vice), but never to be prosecuted any further. To this he added a general acquaintance with whatever is most generally acknowledged as standard in extant or modern literature. What is admired only by a few, Lumley never took the trouble to read. Living amongst trifles, he made them interesting and novel by his mode of viewing and treating them. And here indeed was a talent—it was the talent of social life—the talent of enjoyment to the utmost with the least degree of trouble to himself. Lumley Ferrers was thus exactly one of those men whom every body calls exceedingly clever, and yet it would puzzle one to say in what he was so clever. It was, indeed, that nameless power which belongs to ability, and which makes one man superior, on the whole, to another, though in many details by no means remarkable. I think it is Goëthe who says, somewhere, that in reading the life of the greatest genius, we always find that he was acquainted with some men superior to himself, who yet never attained to general distinction. To the class of these mystical superior men, Lumley Ferrers might have belonged; for though an ordinary journalist would have beaten him in the arts of composition, few men of genius, however eminent, could have felt themselves above Ferrers in the ready grasp and plastic vigour of natural intellect."

Beginning to write.—"Maltravers was not much gnawed by the desire of fame—perhaps few men of real genius are, until artificially worked up to it. There is, in a sound and correct intellect, with all its gifts fairly balanced, a calm consciousness of power, a certainty that when its strength is fairly put out, it must be to realise the usual result of strength. Men of second-rate genius, on the contrary, are fretful and nervous, fidgeting after a celebrity which they do not estimate by their own talents, but by the talents of some one else. They see a tower, but are occupied only with measuring its shadow, and think their own height (which they never calculate) is to cast as broad a one over the earth. It is the short man who is always throwing up his chin, and is as erect as a dart. The tall man stoops, and the strong man is not always using the dumb-bells. Maltravers had not yet, then, the keen and sharp yearning for reputation; he had not, as yet, tasted its sweets and bitters—fatal draught, which, *once* tasted, begets too often an insatiable thirst!—neither had he enemies and decriers whom he was desirous of abashing by merit. And that is a very ordinary cause for exertion in proud minds. He was, it is true, generally reputed clever, and fools were afraid of him; but as he actively interfered with no man's pretensions, so no man thought it necessary to call him a blockhead. At present, therefore, it was quietly and naturally that his mind was working its legitimate way to its destiny of exertion. He began idly and carelessly to note down his thoughts and impressions; what was once put on the paper begot new matter; his ideas became more lucid to himself; and the page grew a looking-glass, which presented the likeness of his own features. He began with writing with rapidity, and without method. He had no object but to please himself, and to find a vent for an overcharged spirit; and, like most writings of the young, the matter was egotistical. We commence with the small nucleus of passion and experience, to widen the circle afterwards; and, perhaps, the most extensive and universal masters of life and character have begun by being egotists. For there is, in a man that has much in him, a wonderfully acute and sensitive perception of his own existence. An imaginative and susceptible person has, indeed, ten times as much life as a dull fellow, 'an he be Hercules.' He multiplies himself in a thousand objects, associates each with his own identity, lives in each, and almost looks upon the world, with its infinite objects, as a part of his individual being. Afterwards, as he tames down, he withdraws his forces into the citadel; but he still has a knowledge of, and an interest in, the land they once covered. He understands other people, for he has lived *in* other people—the dead and the living;—fancied himself now Brutus and now Cæsar, and thought how *he* should act in almost every imaginable circumstance of life. Thus, when he begins to paint human characters, essentially different from his own, his knowledge comes to him almost intuitively. It is as if he were describing the mansions in which he himself has formerly lodged, though for a short time. Hence, in great writers of History, of Romance, of the Drama, the *gusto* with which they paint their personages; their creations are flesh and blood, not shadows or machines. I ought, perhaps, to apologise for these reflections; but, if I do so, I must apologise often in this narrative. For, after all, it will mix much of the essay with the novel; and I have abstained enough from the didactic, in my later fictions, to make me hope I may have my own way in this. Maltravers was at first, then, an egotist in the matter of his rude and desultory sketches—in the manner, as I said before, he was careless and negligent, as men will be who have not yet found that expression is an art. Still, those wild and valueless essays—those rapt and secret confessions of his own heart—were a delight to him. He began to taste the transport, the intoxication of an author. And oh, what a luxury is there in the first love of the Muse! that process by which we give a palpable form to the long-intangible visions which have flitted across us;—the beautiful ghost of the Ideal within us, which we invoke in the Gardara of our still closets, with the wand of the simple pen!"

We close with one of those touches of poetry—that yearning after the ideal—which sheds over Mr. Bulwer's pages "golden exhalations from the dawn."

"'That serene heaven, those lovely stars,' said Maltravers, at last, 'do they not preach to us the philosophy of peace? Do they not tell us how much of calm belongs to the dignity of man, and the sublime essence of the soul? Petty distractions and self-wrought cares are not congenial to our real nature; their very disturbance is a proof that they are at war with our natures. Ah! sweet Florence, let us learn from yon skies, over which the old Greek poetry believed brooded the wings of primæval and serenest love, what earthly love should be—a thing pure as light, and peaceful as immortality, watching over the stormy world that it shall survive, and high above the clouds and vapours that roll below. Let little minds introduce into the holiest of affections all the bitterness and tumult of common life! Let us love as beings who will one day be inhabitants of the stars!'"

We feel that we have not, that we cannot do justice to these thoughtful, these beautiful pages. *Ernest Maltravers* is one of those books over which we should be glad to linger, "making more full acquaintance with its depths." As it is, we can only dismiss it with cordial admiration, and feel that it is at least pleasant to be among the first who praise.

Letters descriptive of the Virginia Springs, the Roads leading thereto, and the Doings thereat. By Peregrine Prolix. 18mo. pp. 248. 2d Edition. Philadelphia, 1837. Tanner.

We noticed the first edition of this little book, which, probably, procured us the compliment of an early copy of the second from Philadelphia, and containing eight letters, in addition to the twelve originally published. In these the author tells us, that, having "*loco-moved*," *viâ* Baltimore, up the Chesapeake to James' River, and so to Richmond, at the expense of seventeen dollars, he thence pursued his course to Lexington, and thereafter visited the country and the springs here described. As few of our readers, perhaps, on this side of the Atlantic, are likely to want a guide to these salutary waters, and those on the other side can have ready access to the original, we shall be content to exemplify it by a few selections which illustrate the style of the writer, and some features of Old Virginny. After crossing the Blue Ridge, it is stated:—

"Every body in this vicinity will tell you that the distance from Lexington to the Natural Bridge is twelve miles; but the shortest route is fourteen miles, six of which being supposed to be impassable, in consequence of the superabundance of rain, the driver of my hack, by name Oliver (a melanthrope of great skill in his art), pursued a route three miles longer. Not being aware of the inconceivable badness of the road, and being naturally averse to early rising, I did not leave Lexington until nine o'clock. Oliver soon horrified me by turning into the road we travelled last evening, and informing me we must pursue it for six miles, and then take a cross road for three miles to get into the direct route. This was bad news, for, in a region of bad roads, the cross roads are the worst, and are as bad as the cross women. And, indeed, until within two miles of the bridge, the road is so pre-eminently abominable, that it has won to itself the title of purgatory, and, like that uncomfortable place, when once in, it requires much whipping to get you out. Notwithstanding the difficulties of mud and mire, rut and rock, hill and hollow, the skilful

Oliver landed me safe at the house near the bridge at two P.M. A melanthropic guide conducted me immediately down a winding rocky path to the bottom of the deep chasm, in which flows the little stream called Cedar Creek, and across the top of which, from brink to brink, there still extends an enormous rocky stratum, that time and gravity have moulded into a graceful arch. The bed of Cedar Creek is more than two hundred feet below the surface of the plain; and the sides of the enormous chasm, at the bottom of which the water flows, are composed of solid rock, maintaining a position almost perpendicular. These adamantine walls did not seem to me to be water-worn, but suggested the idea of an enormous cavern, that in remote ages may have been covered for miles by the continuation of that stratum, of which all that now remains is the arch of the Natural Bridge. I do verily believe that this stupendous object is the ruin of a cave, one of those antres vast in which our limestone regions abound, and which, perhaps, existed previous to the upheaving of our continent, and was tenanted by naiads, tritons, and other worthies of the deep. The first sensation of the beholder is one of *double astonishment;* first, at the absolute sublimity of the scene; next, at the total inadequacy of the descriptions he has read, and the pictures he has seen, to produce in his mind the faintest idea of the reality. The great height gives the arch an air of grace and lightness that must be seen to be felt, and the power of speech is for a moment lost in contemplating the immense dimensions of the surrounding objects. The middle of the arch is forty-five feet in perpendicular thickness, which increases to sixty at its junctions with the vast abutments. Its top, which is covered with soil, supporting shrubs of various sizes, is two hundred and ten feet high. It is sixty feet wide, and its span is almost ninety feet. Across the top passes a public road; and, being in the same plane with the neighbouring country, you may cross it in a coach without being aware of the interesting pass. There are several forest-trees, of large dimensions, growing near the edge of the creek directly under the arch, which do not nearly reach its lowest part. The most imposing view is from about sixty yards below the bridge, close to the edge of the creek; from that position the arch appears thinner, lighter, and loftier. From the edge of the creek, at some distance above the bridge, you look at the thicker side of the arch, which, from this point of view, approaches somewhat to the Gothic. A little above the bridge, on the western side of the creek, the wall of rock is broken into buttress-like masses, which rise almost perpendicularly to a height of nearly two hundred and fifty feet, terminating in separate pinnacles which overlook the bridge. It requires a strong head (perchance a thick skull) to stand on one of these narrow eminences, and look into the yawning gulf below. When you are exactly under the arch, and cast your glances upwards, the space appears immense; and the symmetry of the ellipsoidal concave formed by the arch and the gigantic walls from which it springs, is wonderfully pleasing. From this position the views in both directions are sublime and striking, from the immense height of the rocky walls stretching away in various curves, covered in some places by the drapery of the forest, green and graceful, and in others without a bramble or a bush, bare and blue. I gazed upon his wondrous scene *for an hour and a quarter, a period ten times too short to realise its grandeur;* but having before my eyes (my mind's eyes, Horatio) the fear of a bad road and a moonless night, I forced my reluctant footsteps up the hill, swallowed my mush and milk (too hot) with haste, and at half-past three began my toilsome travel back to Lexington. * * *

"Reader, do not allow the coolness of the neighbours, or the heat of the weather, or the badness of the roads, or the goodness of your equipage, or the inertia of your disposition, or the gravity of your baggage, or the levity of your purse, or the *nolition* of your womankind, or any other creature of any other kind, to prevent you from going to see the Natural Bridge; you never saw its like before, and never will you look upon its like again."

The effects of the adjacent White Sulphur Springs are graphically painted:—"It is (observes the author) pleasant to perceive the gradual change which takes place in the countenances of your valetudinary acquaintances: how, during the first week, the hypochondriac aspect begins to cheer; during the second, the sallow southern hue begins to shade off into a healthy white and red; during the third, the tongue from white to red begins to turn, and, finally, in the fourth week, the elasticity of the step, and the keenness of the appetite, are a double witness that the man is well. * * * From five to eight glasses a day are enough; but the water should be taken for three or four weeks; and the diet should be light, and little in quantity, and digestible in quality. Some people erroneously suppose, that if a little is good, more is better; the Hibernian did not err more, when, being told if he used a stove he would save half his fuel, exclaimed, 'Och! then, I will use two and save it all.'" At another spring the tap is kept by a Captain Lange—speaking of whom, we are told of a new mode of promotion to military rank in the U. S.—

"During the last war, Monsieur Lange led a company of patriotic volunteers to the seaboard to repel the invading Briton, and ever since he has retained the title of captain, not having been fortunate enough to kill a rattlesnake, and thereby to reach the rank of major."

With the writer's departure from this, we shall conclude our specimens:—

"It rained potently all night, and, therefore, I discharged my hack, opining it were better to confide in the greater strength of the stage-coach, and in the superior skill of the driver thereof. The Staunton coach did not arrive until 11 A.M. having suffered a runaway, from the driver having been jolted off the box; and there being but three passengers, we took possession of the back seat, which was politely yielded to us, on account of my elderly and convalescent aspect. The copious rain had converted the naturally bad road into one great quaggy mass of mud and stones, which made our rate of motion less than four miles an hour. Our fellow-passengers were an army officer, a Harrisonburger, and an Arkansawyer. The last was a rough, unkempt, good-looking, manly fellow, six feet two inches high, a Virginian by birth, who had left his native state six and twenty years ago, to seek his fortune in the boundless west. His parents were still living in Virginia, and he was on his way to make them his first visit. This was the first journey he had ever taken in a stage-coach, and the confinement and risk of bones were very irksome to him. We got a dinner at New Market, not worth the time we lost in waiting for it, and arrived at Mount Jackson at half past five, P.M. We changed horses at the Swan, kept by Mrs. Stewart, who has enlarged her house, which exhibits every indication of comfort and plenty. About sunset it began to rain, and soon became pitchy dark, and before the lamps were lighted, our Arkansawyer expressed his unhappiness in the following outpouring or *quasi* soliloquy: 'It was the first time, and it should be the last he would ever get into such a fix; shut up in a dark box, tumbling about every which way, and every minute liable to break one's neck, without being able to see how to help it; give him a Bowie knife, and he had rather fight a bear. His mother used to say, 'my son, never go into any place blindfold; always have your eyes about you.' That was good advice, and he had always kept it until that night, and he always will keep it hereafter. Nobody shall ever catch him in such another fix.' This gentleman was full of sense, mother-wit, kind-heartedness, and good-humour; well versed in the politics of his locality; and his wild appearance the quaintness of his western idiom, and the raciness of his observations, made him quite an interesting character."

The Old Commodore. By the Author of "Rattlin the Reefer." 3 vols. 12mo. London, 1837. Bentley.

THE ocean has now a literature of its own, with its own wild character imprinted upon it. We cannot imagine a time when such works will cease to be popular in England: they embody much that belongs to no other country in the world; their adventure and their humour are essentially national. Now, Mr. Howard is among the best of his class; his scenes are dramatic; they are not like

> "A painted ship
> Upon a painted ocean;"

but alive, stirring, and keeping their readers alive as well. It is a curious thing that this whole school of what we may call marine painting, only excels on its own peculiar element. The moment the writers look out for material on land, they at once become exaggerated, improbable, and go back upon the relics that remain "long lingering by the shores of old romance." It is the case with the present work; the land part of the story is diffuse, extreme, and unlikely; but once with "a wet sail and a flowing sheet," and the author is at home. We know nothing better than the portrait of the Old Commodore, both in his first harsh recklessness, or after "a deep distress has humanised his soul." Perhaps there is nothing so deeply touching as the episode of the Creole girl in "Rattlin the Reefer," but the salt-water interest is kept fresh to the last. As, however, Sir Octavius is of the roughest sort, we had better take him at feeding-time, giving our readers the benefit of his speech beforehand. We must premise that provisions have for some time run short among his crew.

The Commodore's speech.—"'My men, I have served his majesty before most of you were born—(the hat lifted as usual at 'majesty')—and at a time when British seamen gloried in their hardships, and could live upon their glory, for they had very often little else to eat; but you—you are a fallen race, a set of gormandising rascals, who are only thinking of how much living fat you can turn his sacred majesty's, God bless him!—(hat higher than usual)—pork and pease into. It is of no use telling such ravenous eaters as you are, how, when I sailed in the Weazel, in the Dutch war, the men were put upon an ounce of bullock's hide, taken off the main yard, per day per man, and when this failed us, we tried what kind of wood, when reduced to sawdust, would make the best substitute for flour. After several trials, we found

that the hard wood we got from the Spanish main answered the purpose best; and, ever after, it was called *lignum vitæ*, or the log of life, just in the same way as we call bread of wheaten or barley meal the staff of life; and then the little round wooden wheels in our blocks began to get the name of sheaves, for really they were as sheaves of corn to us. Now, you lubbers! I can tell you, that this log-of-life bread was very nutritious, when you had digested it, though I confess that it was rather hard for the teeth; the only two imperfect grinders that I have in my head, I broke in gnawing it; but, you dogs! I should have bolted it, as the Derbyshire clodhoppers do fat bacon. Oh! I see I am making your hungry chops water at the bare idea of the greasy delicacy. I was wrong; I must 'bout ship, and stand on the other tack. Now, my men, ever since I have had command of this ship and squadron, I have been like a father to you all.' 'Ay,' said the full-faced chaplain, who had placed himself close to the orator's elbow, 'you have always imitated the divine example; you have chastened those whom you have loved.' 'Give us none of your jaw till church time,' said his amiable communicant, twisting his spiritual adviser out of the way by means of his iron hook: he continued, 'So, my men, d'ye see, I love you like my own children; and, bating that I have spared the rod, I have proved myself to you a wise and indulgent parent—a little too indulgent, mayhap—allowed a little too much for lee-way in my dead reckoning with you all, but I hope none of you will take advantage of my weakness. Now, for the good of his majesty's service, God bless him, and may he never see a banyan day!—(hat lifted)—you have all been placed six upon four; and hot weather and long keeping will make salt pork and beef shrink like a lawyer in his shroud. I know all this, and I likewise know that ye are not like the men I sailed with in the Dutch wars; in those days four of them would eat up an ox at a meal, or live upon his hoofs for a fortnight, as the case might be, according to orders, and as was most fitting for the good of the service. Ah! there were giants in those days; and sages, too, who made their giants' strength still stronger by their wisdom; and it was those sages who taught the seamen, when provisions ran short, how to make devil's dumplings. Now, my men, as I wish you to make the most of your rations, and as I do not think that any considerations could induce me to allow you to eat the hides of the yards, or grind up the blocks for flour, you had better listen attentively;'—and then the Commodore, taking out of his pocket a well-thumbed volume of Roderick Random, which he generally carried about with him, holding the book in his right hand, commenced very deliberately turning over the leaves with his iron left, as if to discover the right place, and then, pretending to read, went on, with a look sour enough to pickle cabbage without vinegar, as follows: 'Page the 75th, chapter the 14th. 'How to make devil's dumplings. Let the cook of the mess take a four-and-twenty-pound shot, or a shot of any other weight, the heavier the better, and clean it well with spittle and fresh oakum.'' Here, three midshipmen burst out into indecorous laughter, and were immediately sent to the three respective mast-heads, for their unmannerly interruption of the solemnity of the proceedings; and, after the Commodore had eyed them half up the rigging, he continued to appear to read—''Spittle and fresh oakum ——'' 'And then gut it and skin it 'ill come next,' said Stubbs, *sotto voce*, to his neighbour on the line; 'and what will the gunner say?' ''And fresh oakum; then take all the bones you can get, whether of pork or of beef it matters not, and pound them into a pulp, of the consistency of damp flour. You must then return the shot to the shot-rack, and take for every handful of said pulp three handfuls of oatmeal, mix carefully with cold water, and knead all together into dough, and then tie up into dumplings of half a pound each, boil three hours in salt water, season them with gunpowder, and serve up hot as hell. The above dish will be found the most wholesome and savoury that you can put upon the mess-table, when no better can be procured.'' 'I arn't a morsal o' doubt of it, Sir Hoctiovas,' said a grim old quarter-master, one of the instructed.' 'Nor I either, nor any reasonable man,' said the Commodore, in continuation. 'But here is a note at the end of the recipe, which I feel bound to read to you. 'If any sea-faring man, whether sailor or marine (the cook having left any splinters of the said bones unpounded), should, enticed by the relish, swallow portions of these dumplings too greedily, and the said bones, or any of them, stick in his throat, he may relieve himself, either by thrusting them down with a greased monkey's tail, or have them forced upwards, by requesting his messmates to pummel him between the shoulders, to do either of which he may use his pleasure; and then the cook may be suitably cobbed afterwards.'''

This is followed by the dinner:—

"For the first course, there was at one end of the table a soup made of the ship's pease—gray-coated gentlemen that scorned to be split, and endued with a surprising hardness of heart, considering the boiling to which they had been subjected; but this preparation was made unctuous, and consequently nutritious, by gobbets of fat and rancid salt-pork, floating amongst the impervious pease; and at the other end there stood a superb tureen of lobscouse. Everybody knows what lobscouse is; it is a dish fit for the gods, and of that satisfying nature, that a spoonful is sufficient for a whole year for a mere mortal, when he can get any thing else to eat. There were two dishes of fish in the centre; a shark had been caught the day before, and these dishes were parts of one of them—strips of the tail fried in Florence oil, and the other strips of the said tail boiled *au naturel*. * * *

"The third course made its appearance: under the nose of the Commodore smoked an apple plum-duff, baked. The centre dish was a failure, being nothing better than ship's biscuit baked, so that if you ate it, you did not eat the insect tribes that it contained alive. There should have been there a superb dish of twice-laid, only the rats had eaten up all the salt-fish, and the Commodore and his friends had eaten up all the potatoes; but there were ample amends made for this disappointment in the noble dish of dough-boys, that fumed up odoriferously at the lower end of the table, with its accompanying rich sauce of Florence oil, cinnamon, and sugar. The Commodore peered his one eye over at them; the first lieutenant ogled them with both his; the second lieutenant stared at them; the chaplain mentally blessed them, and had a great mind to do them honour, by resaying over them the grace before meat; the purser was singling out the largest; and the midshipman had already one hand upon the sauce-boat in blissful anticipation. Now, the Commodore's dough-boys were famous throughout the fleet; the dough-boy of nautical eating is generally nothing more than a mixture of flour and water, boiled unleavened bread, so tenacious and hard, that you might use them for a bowl for skittles; or, on an emergency, fire off for round shot, and with good hopes of doing considerable execution. But the Commodore's dough-boys were *toute-autre-choses*. The cook of the generous giver of dough-boys was a Palermeritan, and he had a secret entirely his own, of making these little puddings almost as light as a *vol-au-vent*; and the process he used for their fermentation left after it neither the bitter taste of yeast, nor the sour one of the common French leaven. The Commodore had always a few barrels of the finest American flour devoted to the sole purpose of manufacturing these delicacies. They are on the table, exactly six of them, looking rich in the brown sauce with which they are covered, and corresponding to the number of guests at the table. The Commodore having a design upon two of them for his own share, commences with an insinuating smile to his first-lieutenant, 'Shall I help you to a slice of this plum-duff? it looks very good.' But the artifice was seen through. 'I thank you, Sir Octavius—no; a dough-boy, if you please.' To the same hypocritical question all around, he received no other answer than that of, 'A dough-boy, if you please, sir.' At length, each is happy at having one of the coveted globes smoking on his plate, and swimming in a fresh supply of sauce. Almost simultaneously, a piece, not remarkable for its diminutive size, is conveyed into the mouth of each, and with a crash spat out again by four of the party—the midshipman and the parson had bolted theirs in their epicurean eagerness; then followed execrations and curses, and the calling for water, to wash away the taste of the abominations from their mouths. In the first paroxysms of his rage the Commodore sent for his steward, his cook, and his cook's-mate, fully resolving to make them eat up the horrible compound, and then to procure them a good digestion for it, by giving them six dozen a-piece. As the astonished accused stood trembling and protesting their ignorance, the purser commenced a more minute examination of his dough-boy, which he had taken care should be the largest. Upon forcing it open with his knife and fork, he discovered in the centre a slip of paper, upon which was written legibly, 'A devil's dumpling, respectfully presented to Sir Hocktiveus Baccky Squirt. N.B Greased monkeys' tails can be had of the gunner, upon application.'"

A dinner often leads to important results: it does in this case. We regret that we have not room for the capture of La Magnifique: we can now only commend to our readers the remaining exploits of "the Old Commodore."

MISCELLANEOUS.

Duncombe's Acting Edition of the British Theatre: No. CCLX. The Cavalier.—From a list on the wrapper, we perceive that this cheap edition of the drama comprises most of the pieces acted at our various minor theatres: and a goodly number they are, seeing that the present publication is above 200. *The Cavalier*, asbrought out at the Haymarket, displayed considerable powers, but was altered, in consequence of the catastrophe being thought by some to be too deep for domestic tragedy. It is here printed in its softened form, though we cannot say that we agree with those who seem to wish the tragic muse, before she quits the stage, to *drop* all her tears, and exit in smiles. We have only to repeat that the author, in either case, displays much dramatic talent.

ARTS AND SCIENCES.

BOTANICAL SOCIETY.

SEPTEMBER 7th. J. E. Gray, Esq. F.R.S., president, in the chair.—A paper was read on a new species of Loranthus, accompanied

by a highly finished drawing, named by Mr. Schomburgk, *Loranthus Smythii*, in honour of Lady Jane Carmichael Smith, a great admirer of botany, which created much interest. The thanks of the Society having been ordered to be returned to Mr. Schomburgk for his kind assistance, he was unanimously elected a foreign member.* Donations of many hundred plants were announced, and the president, previous to adjourning the meeting, begged to impress upon the members the necessity of speedily sending in such duplicates of plants to the Herbarium as they could spare, in order that the general distribution of the Society's duplicates might take place in the months of December and January. The meeting then adjourned until the 5th of October.

LITERARY AND LEARNED.

UNIVERSITY INTELLIGENCE.

The following gentlemen of the University of Oxford were admitted into holy orders on the 6th of August, at an ordination held in the Cathedral Church of Ripon by the bishop of that diocess:—

Deacons.—F. W. Faber, B.A., University College; A. Gatty, B.A., Exeter College; J. Boustead, M.A., Queen's College; E. Roberts, B.A., Jesus College; G. A. Wright, B.A., Worcester College; G. T. C. Lamotte, B.A., Balliol College.

Priests.—F. F. Langston, M.A., St. John's College; R. F. Taylor, M.A., Brasennose College; W. J. E. Rooke, M.A., Brasennose College.

FINE ARTS.

NEW PUBLICATIONS.

ANAGLYPTOGRAPHY.

Portrait of the Duke of Wellington. Jennings.

Among the latest of the beautiful productions of Mr. Bate's patent machine for engraving from reliefs — to which he has given a high sounding, but good classical name, Anaglyptograph — is this capital portrait of the Duke of Wellington, from a medal after a model by P. Rouw. This is, in our opinion, the most striking production of this curious art that we have seen: its beautiful execution, bold relief, and perfect truth, justify all the conclusions to which we came in our *Literary Gazette* for Feb. 11, 1837.

It is stupid blindness not to see the difference in the spirit, the brilliancy, and accuracy of representation, between such productions of Bate's patent machine and those by the French process. We certainly marvelled much that the party interested in publishing the French print of his late Majesty William IV. should have given to the world the letter of Sir Francis Chantrey, admitting, as it does, the distortion of the representation: perhaps we marvelled a little at his writing it; but before this distinguished artist is again coaxed into any praise of such a work, we hope he will look well at some of the accessories in the Frenchified exuberance of ornament around the head: if any regular form be ruled there, he will instantly detect a greater amount of distortion than he may think exists in the work. Let him and the world look at the crown above the head in the print of the late king, and they will instantly perceive the distortion which exists throughout the entire work in the same proportion: it is only less offensive where the relief is lower. In a head, which is an irregular object, this is not so obvious, except to an artist. No artist would have placed the ear so far forward, or squabbed the features so monstrously. This is the distortion produced by the French machine in the heads of Louis Philippe and William IV.; the result of the necessity of crowding the remaining lines and form between the ear and the outline of the face. Wherever there is a rim to any medal which the French have engraved — even in their prospectus specimen circulated for the Napoleon medals — let the light side and the dark side be compared, the former is as much broader as the elevation of the rim is above the field of the medal; and this proportionate distortion exists in every part of the figure raised above the field. Yet, that this may not be mistaken for perspective, let it be observed, that the rim and the field are, in the engraving, both circles; but they are not concentric. Compare such specimens with this head of Wellington, engraved by Freebairn, with Bate's machine, wherein every point in the model is truly placed. Yet, when the medal, from which this was engraved, was shewn to one interested in foisting the French process as perfection upon the public, he asserted to the publisher of this print, that it could not be engraved by Bate's instrument, but *must be sent to France!* The unmeasured impudence of this assertion is proved by this print, which we challenge the French party to imitate by their machine with the entire relief and the same accuracy; or let them, if they can, engrave so simple a form as a cone upon a square base, like our former specimen, or any other regular figure in relief, without betraying the imperfection of their machine; they cannot, unless by adopting the principle of Bate's Anaglyptograph, when they will expose themselves to prosecution for a violation of his patent.

The hint may not be wasted which also suggests a little more truth and fairness in those who describe what the English can do in this art as contemptible,—a practice which the party, who asserted that it was necessary to send this head of Wellington to be engraved in France, too much indulges in. Sneers and inuendos will neither make Bate's productions false, nor those of the French true. The injuries of such misrepresentation has always recoiled upon the party; and all the exposure they have lately received from us has been provoked by their efforts to vilify English art and artists. There is room enough for their productions and ours; since it has been observed of quacks, that they are employed by those who do not think or judge, whilst the regulars are encouraged by those who do. Upon this principle, the ignorant will be served with the imperfect productions of the French; and those who have taste and judgment, with the beautiful and accurate productions of Bate.

Since we investigated this subject, we have felt warmly for the success of the British invention and patentee. If our neighbours can excel us in a fair competition, they shall have our praise; but, until they can do this, we shall not let the assertions and assumption of interested persons pass without exposure.

Illustrations of the Landscape Annual, for 1838. Jennings and Co.

We have before us the Illustrations of the volume of the Landscape Annual, which will be published next month. This volume, we regret to say, will complete the series of views in Spain. We regret this, because we know it will be difficult to select any other country so abounding with magnificent and picturesque subjects, both of nature and of art. An agreeable variety is communicated to the volume, by its containing "several views of the most striking objects in the adjoining (?) kingdom of Morocco." The whole of the plates are exquisitely engraved, by Messrs. Adlard, Allen, Brandard, Carter, Challis, Cousen, Fisher, Goodall, Higham, Jeavons, Karnot, Stephenson, Wallis, and Willmore, from drawings by David Roberts, Esq., made, many of them, after sketches by himself, the remainder after sketches by Colonel Harding, and Lieutenants Edridge and Smith, of the Royal Engineers, and Richard Ford, Esq. The views are full of romantic character. Of those in Spain, some of the most striking are, "Interior of the Cathedral of Seville," "Gate of the Serranos, Valencia," "Leaning Tower at Saragossa," "Segovia," and "Placencia,"— "General View of Morocco," "Great Square at Tetuan, from the Jews' Town," "Citadel of Tangiers," "Rabatt and Salee," and "The Town of Constantina," are distinguished among the Morocco subjects for their beauty. The last-mentioned, circumstances have rendered especially interesting. It will not surprise those who look at it, that the French were foiled in their attempt to obtain possession of a place, which, except by a narrow bridge over a deep abyss, that might be destroyed in a few minutes, appears to be absolutely inaccessible. We must not omit to mention the happy manner in which Mr. Roberts has enriched the various scenes, by groups of animated and picturesquely habited figures.

The Wife. Painted by E. Prentis; engraved by J. C. Bromley. Graves.

A fine personification of the apostrophe in Sir Walter Scott's admirable and well-known contrast between the several qualities of the female character: —

"A ministering angel thou!"

It represents a tender wife, anxiously watching the midnight slumbers of a beloved husband laid in the bed of sickness; and, like all Mr. Prentis's works, evinces great talent, while it assists in the inculcation of those domestic charities and affections that can alone render existence a blessing.

Thirty-four Subjects of Cattle, &c.: Designs for Pictures. By T. S. Cooper. Printed at A. Ducôte's Lithographic Establishment. M'Lean.

The finest work of the kind that has ever come under our review. Mr. Cooper's well-known skill in the delineation of animal nature renders it unnecessary for us to expatiate on the attractive character of these designs, further than to observe, that they are as full of variety as they are of truth and beauty; and that they form an almost inexhaustible store, from which the landscape-painter, be he artist or be he amateur, may derive materials for enriching his productions. Nor ought we to omit to notice the admirable quality of the lithographic execution. The shadows are distinguished by a happy union of tenderness and spirit, and the lights are more powerfully imparted than we ever before saw them in that rapidly improving style of art.

ORIGINAL POETRY.

THE STARS.

Thrice happy those who still, with faithful eye
Gaze on the stars, and read in them their fate;
Who stoop not to the earth, and dimly guess
The future from frail reason, but upturn
Their soaring thoughts, and in the glittering skies
View with unerring glance man's destiny.
The student musing in the midnight hour,
As, through the open casement, on his page
Beams the bright orb that claims him for its own,

* For Mr. Schomburgk's paper on the discovery of a new plant, the "Victoria Regina," also read, see our Report of the proceedings of the British Association, p. 589.

Receives new vigour, feels his soul expand,
And in the rays that centre on his brow
Traces his distant glory. In the eve,
The anxious mother and her circling flock,
Thinking in silence on the absent one,
Hail with delight the messenger of peace.
The wand'rer's star, as from the dusky wood
It slowly rises, silvering o'er the trees
'Neath which his boyhood sported. In the camp,
The watchful soldier at his lonely post
Feels his heart bound, and ev'ry pulse beats high
When flashes forth his fortune's arbiter
In proud career, and heralds with its fires
The morrow's victory. The maiden's breast
Ceases to doubt the love and constancy
Of him who, by her side, is floating o'er
The lake's dark waters, as she sees his star
Mingling its softened radiance with her own,
And resting on the bosom of the waves
In long, unbroken union. The pale
And careworn widow, mourning for the lost,
Finds consolation as she nightly views
The orb, to which is linked her destiny,
Decline in glory, and, with swift decrease,
Point to a speedy meeting in the tomb.

August 9, 1837. RIGEL.

BIOGRAPHY.

PROFESSOR RITCHIE.

WE are concerned to hear that Dr. Ritchie, Professor of Natural Philosophy and Astronomy at University College, and of Natural and Experimental Philosophy at the Royal Institution, died at Portobello, on the 15th inst., of fever, after a fortnight's illness.

DR. FREDERICK ROSEN.

THIS amiable and accomplished Sanscrit scholar, who was engaged on the MSS. at the British Museum, died rather suddenly. His death was caused, we believe, by an injury received while lifting a quantity of books at the East India House. He was educated at Leipsic, and studied also at Bonn. Professor Rosen was a man of very great acquirements, and did honour to the literature of the age. A native of Germany, he had resided some years in London; and, in connexion with the London University, was extensively known and highly esteemed. He was the friend of Gesenius, and loved by all who knew him. Dr. Rosen died at the early age of thirty-two.

DRAMA.

Covent Garden.—Mr. Macready commences his first season on the 30th of the present month; *The Winter's Tale* is to be the opening piece, and is very highly cast.

Haymarket.—Power has been playing every night since our last, and we need hardly add, to bumper houses. He appeared on Wednesday, for the second time, in a new comedy written by himself, and called *Etiquette, or a Wife for a Blunder*, in which, as one of the daily papers says, Mr. Power the author is greatly indebted to Mr. Power the actor! There are several other good parts in this piece, which were intrusted to Strickland, Webster, and Mrs. Humby, but *Captain Denis O'More* is, of course, the most prominent; it was enacted by Power himself, with his usual ability, and was infinitely droll. A further novelty, under the name of the *Queen of the Beggars*, from the pen of Mr. Serle, has, also, been played with success.

English Opera.—On Thursday week an excellent little melodrame, entitled *The Highland Cateran*, was transplanted from the Edinburgh theatre, where it has had a considerable run under the name of *Gilderoy*, to this house, in which we venture to predict it will be equally, if not more, successful. The different parts were admirably played; the *Cateran*, by Brindal, and *Jock Muir*, a Highland herd, by M'Ian, were quite perfect. A broad-sword combat between the latter and Mr. Goadby was much applauded.

Mr. Peake holds out a tempting bill for his benefit, which will wind up, we hope, a prosperous season. On this occasion Mr. Power gives his valuable assistance.

VARIETIES.

Anecdote of the late John Constable, Esq. R.A.—Mr. Constable exhibited, in his general deportment, the same originality and independence of character which marked the productions of his vigorous pencil, and never permitted the conventional usages of society to restrain him from the free expression of his opinions and feelings. During one of his lectures on the Fine Arts at the Royal Institution, he spoke in very disparaging terms of Berghem. After the lecture, some of the company clustered about the lecturer, for the purpose of having a little conversation with him. "Mr. Constable," observed a nobleman, distinguished by his *virtu*, "I am sorry you think so meanly of Berghem; for I possess three or four of the finest Berghems in the world. Would you advise me to sell them?" "By no means, my lord," said Mr. Constable, "it would be a dishonest act to sell them." "Well, but what would you advise me to do with them?" asked the peer. "Burn them, my lord," was the painter's prompt reply.

Extreme Delicacy.—Mademoiselle Mars was born on the 7th of February, 1779; so that she is now ——; but it is invidious to calculate a lady's age.—*Galignani's Messenger.*

Contrast of the past Season.—The new Royal Academy Exhibition, in Trafalgar Square, contains 530 feet in length of wall devoted to Oil Pictures; and the number exhibited was 541 Oil Pictures. The Gallery of the Society of British Artists in Suffolk Street, Pall Mall East, contains 575 feet in length of wall devoted to Oil Pictures; and the total number exhibited was 576 Oil Pictures. Thus, the Suffolk Street Gallery contained 35 Oil Pictures more than the new rooms at the Royal Academy. The height of the rooms being similar or nearly so, the average size of the pictures must have been larger in Suffolk Street, since the number of pictures about equal the number of feet of line of wall, whilst those in the Academy exceed the number of feet on their line of wall. The members of the Royal Academy have their galleries given by the nation, and have the royal patronage extended to them in the most exclusive manner, together with all artistical honours, but their rooms are not a mart for pictures for the support and encouragement of art. The Suffolk Street Society built their galleries at their own expense, and are entirely dependant on the patronage of the public: whilst they sell more pictures for the great body of artists than any society in the united kingdom. But it has had no shelter or protection either from royalty or from the government! Is this as it should be?—[*A Correspondent.*]

Weather-Wisdom.—We have had improved weather during the week; and yesterday, instead of being cold and rainy, was a beautiful summer's day. The coming week: "The 23d and 24th changeable. The 25th has contradictory testimonies; fair at times, yet cool and changeable. The 27th may bring fair weather, which, I think, prevails a few days. The end of the month has tokens of high winds —stormy."

South Pole.—A French expedition has sailed from Toulon to explore the antarctic regions; and proceed, if possible, beyond the limits of Cook and Weddell.

Ancient Theatre at Catania.—From some interesting excavations recently made by M. Sebastian Ittar, there is every reason to believe that this was originally a Greek theatre, rebuilt, with some differences of plan, by the Romans. It is also obvious that marine pieces were performed on real water, as the means for inundation are obvious, and the places for the entrances and exits of the boats, &c. still remain. The pit was a mosaic of marble, granite, and Rosso-antico; and the torso of a faun, part of a dolphin, and other sculptures, were found.

Indian Coal.—New mines of coal have recently been discovered at Hanarecbang and at Bidgegur, in the south-eastern corner of the Mirzapore district, said to be superior to the coal of Burdwan. This discovery will probably form an important era in the history of steam navigation in India.

LITERARY NOVELTIES.

We understand that Messrs. Hodgson and Graves are about to commence the publication of twelve of the finest of the Cartoons and Tapestries of Raphael, engraved in Basso Relievo, with Bate's patent Anaglyptograph, by A. R. Freebairn, accompanied by a history of those magnificent works.

A new volume of Sermons, by the Rev. Henry Woodward of Ireland, author of a volume entitled "Essays, Thoughts, and Reflections, and Sermons, on various subjects," is expected to appear shortly.

A Statistical Journal, and Record of Useful Knowledge, is announced for monthly publication, beginning in October.

LIST OF NEW BOOKS.

Rudiments of Physiology, by the late J. Fletcher, M.D. &c.; edited by R. Lewins, M.D. &c. 8vo. 19*s.*—Prize Thesis, on the Presence of Air in the Organs of Circulation, by J. R. Cormack, M.D., 8vo. 1*s. 6d.*—Dr. Bennet on the Physiology and Pathology of the Brain, 8vo 2*s. 6d.*—Charge, by the Rev. F. Hodgson, Archdeacon of Derby, 1837; 4to. 2*s.*—The Old Commodore, by the Author of "Ratlin the Reefer," 3 vols. post 8vo. 1*l.* 11*s. 6d.*—First Principles of Medicine, by A. Billing, M.D., 2d. ed., 8vo. 6*s.*—The Naturalist's Library, vol. XIX. (Swainson's Birds of Africa, Vol. II.), 12mo. 6*s.*—The Dispatches, &c., of the Marquess Wellesley, Vol. V. 8vo. 1*l.* 5*s.* (completing the work).—Simpson's Plea for Religion, a New Edition, edited by his Son, with the Life, by Sir J. B. Williams, f. cap 8vo. 7*s. 6d.*—The Book of Psalms, a New Translation, by W. Walford, 8vo. 15*s.*—St. Paul's Epistle to the Romans, Explained in Simple Language, by G. B. 12mo. 3*s.*—Wyld's Map of the London and Birmingham Railroad, folded, 2*s. 6d.*—A German Grammar, by the Rev. J. G. Tiarks, 12mo. 6*s.*—Cassell's Italian and French Conversation, 12mo. 3*s. 6d.*—F. W. Simms on the Principal Mathematical Drawing Instruments Employed by the Engineer, Architect, and Surveyor, with Wood Cuts, 12mo. 2*s. 6d.*

METEOROLOGICAL JOURNAL, 1837.

September.	*Thermometer.*	*Barometer.*
Thursday .. 14	From 40 to 60	29·23 to 29·50
Friday 15	.... 33 .. 60	29·50 .. 29·67
Saturday .. 16	.... 29 .. 60	29·89 .. 29·94
Sunday 17	.... 29 .. 71	29·94 .. 30·00
Monday .. 18	.... 52 .. 67	29·96 .. 30·04
Tuesday .. 19	.... 48 .. 69	30·05 .. 30·01
Wednesday 20	.... 50 .. 69	29·94 .. 29·67

Wind S.W.

Generally cloudy, except the 15th, 17th, and 20th; a little rain on the 14th, 16th, and 18th.

Rain fallen, ·625 of an inch.

Edmonton. CHARLES HENRY ADAMS.

Latitude....51° 37′ 32″ N.
Longitude.. 3 51, W. of Greenwich.

TO CORRESPONDENTS.

H. D. is probably right: and we hope in due time to lift the bushel off the light. In the mean time it shines very fairly from its dark corner.

We *surmise* that J. B.'s "Touch on the Times" is rather too political for our pages.

ERRATA.—In our last week's *Gazette*, p. 590, col. 1, par. 2, *for* Cross, *read* Crosse; and in p. 593, col. 2, l. 57, and col. 3, l. 23, *for* Adams, *read* Addams.

ADVERTISEMENTS,

Connected with Literature and the Arts.

WILL BE SHORTLY CLOSED.—DIORAMA, REGENT'S PARK.—New Exhibition, representing the Interior of the Basilica of St. Paul, near Rome, before and after its Destruction by Fire: and the Village of Alagna, in Piedmont, destroyed by an Avalanche. Both Pictures are painted by Le Chevalier Bouton.

Open daily, from Ten till Five.

KING'S COLLEGE, LONDON.—SENIOR DEPARTMENT.—The Classes in Theology, the Classics, Mathematics, English Literature, and History, under the superintendence of the Principal and Professors, the Rev. T. G. Hall, R. W. Browne, and T. Dale, will be Re-opened on Tuesday, the 3d October.

The Classes for Private Instruction in Hebrew, the Oriental and other Foreign Languages, will recommence on the same day.

JUNIOR DEPARTMENT.—The Classes in the School were Re-opened on Tuesday, the 15th instant.

August 26. H. J. ROSE, B.D., President.

N.B. Chambers are provided for such Students in the Senior or Medical Department, as are desirous of residing in the College.

Albemarle Street, Sept. 1, 1837.

ROYAL INSTITUTION of GREAT BRITAIN.

The extended and practical Course of Chemical Lectures and Demonstrations, for Medical and General Students, delivered in the Laboratory of this Institution, by Mr. Brande and Mr. Faraday, will commence on Tuesday, the 3d of October, at Nine in the Morning, and be continued on Tuesdays, Thursdays, and Saturdays, at the same Hour.

Two Courses are given during the Season, which will terminate in May.

For a Prospectus of the Lectures, and Terms of Admission, application may be made to Mr. Brande or Mr. Fincher, at the Royal Institution.

JOSEPH FINCHER, Assistant Secretary.

TO ARTISTS, TOURISTS, AND ADMIRERS OF THE FINE ARTS.

PARLOUR'S PORTABLE SKETCHING-CASE, or DELINEATOR, is confidently recommended to the notice of all persons attached to the Science of Drawing, as being infinitely superior to the Camera Lucida, and all other instruments hitherto invented, for the purpose of Sketching. The Sketching-Case may be held in the hand, and a correct Drawing made of any object or landscape; or it may be attached to a table, in the same manner as the Camera Lucida. It is simple in its management, and does not exceed, in size, the common Sketching-Book. Manufactured for the Patentee, by Reeves and Sons, 150 Cheapside; may be had, also, of Smith and Warner, Marylebone Street, Piccadilly; Watkins and Hill, Opticians, Charing Cross; and at all other Opticians' and Artists' Repositories. Ladies and Gentlemen who have the Camera Lucida may have the Delineator affixed to their own stem.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL. Session 1837-8.

The following Courses of Lectures will be delivered in this School, commencing October 2, 1837.

Theory and Practice of Physic—Dr. Macleod and Dr. Seymour.
Theory and Practice of Surgery—Mr. Cæsar Hawkins and Mr. G. Babington.
Clinical Medicine—Dr. Macleod and Dr. Seymour.
Clinical Surgery—Sir B. C. Brodie, Bart. Mr. Cæsar Hawkins, and Mr. G. Babington.
Materia Medica—Dr. Seymour and Dr. Macleod.
Midwifery—Dr. Robert Lee,
Medical Jurisprudence—Dr. Hope and Dr. Lee.
Botany—Dr. Robert Dickson.
Anatomy and Physiology—Mr. Tatum and Mr. Henry James Johnson.
Demonstrations of Practical Anatomy, with Dissections—Mr. H. J. Johnson and Mr. Henry Charles Johnson.
Chemistry at the Royal Institution—Mr. Brande and Mr. Faraday.

The Introductory Address on the Opening of the Hospital School for the Session, will be delivered on Monday, October 2d, at One o'Clock, P.M. in the Theatre of the Hospital.

The Anatomical Lectures and Demonstrations are delivered in the Anatomical Theatre in Kinnerton Street, Wilton Place.

Further Particulars and Prospectuses may be obtained by applying to the Porter of the Hospital, to the Porter of the Hospital Museum, or at the Anatomical School in Kinnerton Street.

TO PARENTS and GUARDIANS.—A Member of the Royal College of Surgeons, and Licentiate of the Apothecaries' Company, who is the Resident Medical Officer of a Public Institution at the West End of the Town, at which there are upwards of Four Thousand Patients annually admitted, would be happy to receive a YOUTH of respectable connexions into his Establishment as an APPRENTICE (at an equivalent, but moderate Premium), who would have ample opportunities of acquiring a thorough Knowledge of his Profession during his Apprenticeship, so as to be fully qualified for his Examinations at the College and Hall at its expiration. He would have gratuitous admission to Lectures on Anatomy, Physiology, Pathology, Practical Anatomy and Demonstrations, Principles and Practice of Medicine, Materia Medica, Principles and Practice of Surgery, Midwifery, Medical Jurisprudence, Chemistry, Pharmacy, and Botany. Every respectable and satisfactory reference will be given and required.

For further Particulars apply, by letter, post-paid, addressed to W. S. F. 25 Great Quebec Street, Montagu Square.

THE PUBLISHERS' CIRCULAR. At various meetings of Publishers, held at the Chapter Coffee House, it was resolved to publish, on the 1st and 15th of each month, a royal 8vo. Sheet (entitled "the Publishers' Circular,") to contain Advertisements connected with Literature, Music, and the Fine Arts. Being liable to the duties chargeable on a newspaper, it will be stamped, and will circulate free through the Post Office. This List will be sent gratis to a selected (and limited) number of persons, viz. Booksellers, Secretaries of Book Societies, and Private Gentlemen, from whom early applications are requested, the number to be delivered gratis being limited to 3000, after which the price will be 2*d.* each or 4*s.* annually. A more detailed Prospectus may be had at any Bookseller's in Town or Country. Any gentleman wishing to receive the List is requested to write to that effect (post-paid) to the Editor, Mr. Sampson Low, care of Wilson and Son, 57 Skinner Street, London; where Advertisements are received.

The First No. will be published on Monday, October 2.

SALES BY AUCTION.

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MESSRS. SOUTHGATE and SON, HAVE RECEIVED INSTRUCTIONS TO SELL BY PUBLIC AUCTION,

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Specimens may be seen, and Catalogues, price 1*s.*, had at the Rooms.

Money advanced upon Duplicate Portions of Booksellers' Stock, upon Libraries, and on Literary Property in General.

BOOKS IN THE PRESS.

13 *Great Marlborough Street, Sept.* 23.

MR. COLBURN will publish immediately the following New Works:—

I.

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With Memoirs of his Contemporaries.

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II.

On the 1st of September was published, price 2*s.* 6*d.* Part II. (Part III. November 1st), of a

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By William Yarrell, F.L.S.

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IV.

On the 1st Dec. will be published, uniform with the above three works, and completing the Natural History of the Vertebrate Animals of the British Islands, Part I. price 2*s.* 6*d.* of a

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By Professor Bell.

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*** A few Copies of the above four Works are also printed in royal and imperial 8vo.

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THE DESPATCHES, MINUTES, and CORRESPONDENCE of the MARQUESS WELLESLEY, K.G. (Vol. V. completing the work), revised by his Lordship, and Edited by Mr. Montgomery Martin, is this day published, by Messrs. W. H. Allen and Co., Booksellers to the Hon. East India Company.

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